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ASVAB

COUNSELOR'S MANUAL

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COUNSELOR'S MANUAL
FOR THE
ARMED SERVICES VOCATIONAL
APTITUDE BATTERY
FORM 14

REVISED PRINTING
SEPTEMBER 1989

Dear Counselor:

The introduction of the *Armed Services Vocational Aptitude Battery Form 14* (ASVAB-14) during the 1984-85 school year offers counselors a resource for career counseling and necessitates further learning about this new battery and its applications. The American Association for Counseling and Development (AACD) is pleased to assist the approximately 14,000 schools that administer the ASVAB annually by preparing the *Counselor's Manual for the ASVAB Form 14.*

Presently, schools are faced with increasing expectations and declining financial resources. If students are to receive quality career counseling services at a reasonable cost, the ASVAB should be considered as a component of the school testing program.

Many counselors have been able to use ASVAB results with students to increase self-understanding, to encourage career exploration, and to improve decision making. Others have yet to become familiar with the possibilities that exist. This new manual has information to offer counselors with prior involvement in ASVAB testing and those who have not been involved in the past.

It is hoped that you, as a school counselor, will actively participate in the ASVAB testing process in your school. Because of your familiarity with students and training in test interpretation, you can integrate ASVAB results with other important student information.

AACD believes this manual will help counselors maximize the utility of ASVAB-14 in their career guidance and counseling programs.

Sincerely,

Patrick J. McDonough

Patrick J. McDonough
Executive Director
American Association
for Counseling and Development

Alexandria, Virginia
July, 1984

List of Figures vii
List of Tables viii
Foreword ix

1 Introduction to ASVAB-14 1
Purposes 2
Key Features 2
Content 2
The ASVAB and Counseling 6

2 Testing Procedures 7
Planning for Testing 8
Scheduling the Test 9
Day of Testing 13
Distributing the Results 13

3 Technical Characteristics 15
The Reference Population 16
Parallelism of Forms 17
Reliability 17
Validity 18
ASVAB-14 Composites 20

4 ASVAB Results 21
Report Forms 22
Understanding the Results 29

5 Interpretation 37
Reporting the Results 38
Guidelines 40
Case Studies 42

CONTENTS

6 Exploring Careers: The ASVAB Workbook 59
Overview 61
Philosophical and Technical Background . 62
A Quick Tour of the Workbook 68
Using The Workbook In Different Ways 81
Supplementary Exercises 93
7 Questions and Answers 111
8 Annotated Bibliography 115
Military Information 116
Counseling Resources 117
References 121
Appendices 125
A History of the ASVAB 126
B Sample Test Items 128
C The ASVAB and the Military 132
D Descriptive Statistics 135
E *Military Career Guide* 143
Handouts 151
I Using the *Military Career Guide* 153
II Explanation of ASVAB Results 157
III ASVAB Scores 159
IV The Military Recruiter 167
V Know Yourself 169
VI Questions for the Future 173
VII Linking Your ASVAB Scores to Specific Occupations 177

1-1 ASVAB-14 Content 3

1-2 Academic Composites 4

1-3 Occupational Composites 5

2-1 Privacy Act Statement 11

4-1 *ASVAB Results Sheet* (Front) 23

4-2 *ASVAB Results Sheet* (Back) 24

4-3 *ASVAB Test Score Results Roster,* Alphabetical Listing, with Hypothetical Data 27

4-4 *ASVAB Test Score Results Roster,* Statistical Reports, with Hypothetical Data 28

4-5 Confidence Bands 31

4-6 Sample Student Listing for Composite Scores from the *ASVAB Test Score Results Roster* 34

4-7 Sample Grade Statistical Report from the *ASVAB Test Score Results Roster* for *Academic Ability* 34

5-1 ASVAB Student Results for Christine 42

5-2 *Strong-Campbell Interest Inventory* Results for Christine 43

5-3 ASVAB Student Results for Doug 46

5-4 *Counselor Summary* for Marsha 49

5-5 *Counselor-Summary* for James 54

5-6 *Self-Directed Search* Results for James 54

6-1 Occu-Find 75

6-2 Hits And Misses 78

6-3 Summary Sheet 79

LIST OF FIGURES

LIST OF TABLES

2-1 ASVAB Materials 10
3-1 Comparison of the ASVAB Reference Population to the National Population of 16-23 Year Olds 16
3-2 Alternate-Form Reliability Coefficients by ASVAB Composite 18
A-1 ASVAB Forms by Dates Used 127
D-1 Distribution of ASVAB Norm Groups by Sex 136
D-2 Alternate-Form Reliability Coefficients for ASVAB -8, -9, and -10 137
D-3 Internal-Consistency Coefficients 138
D-4 Standard Errors of Measurement 140
D-5 Intercorrelation of Composites for Grades 11-12 141
D-6 Intercorrelation of Composites for the Two-Year College Group 142
D-7 Intercorrelation of Composites for the Youth Population 142
E-1 Contents of the *Military Career Guide* 143

The *Armed Services Vocational Aptitude Battery* (ASVAB) was first offered to schools by the Department of Defense in 1966. Since that time, it has become an integral component of many schools' testing programs and today, over 1.3 million students in approximately 14,000 schools take the ASVAB annually.

The widespread use of the ASVAB has resulted in suggestions regarding how the test might be made even more useful to schools. As a result, the Department of Defense has conducted ongoing, extensive research for the purpose of improving the test and is pleased to be providing schools with the latest version - *ASVAB Form 14*. The *Counselor's Manual for the ASVAB Form 14* was developed to assist counselors in understanding and using this improved version of the test.

The *Counselor's Manual for the ASVAB Form 14* was developed as a result of the efforts of many individuals. In particular, we wish to thank the American Association for Counseling and Development (AACD) for preparing the manual. The insight of the many AACD representatives on this project regarding the type of information most needed by counselors has been invaluable.

Representatives of several AACD divisions comprised the project advisory committee. Members of this group included Dr. Joe Johnston, University of Missouri-Columbia, Association for Counselor Education and Supervision; Ms. Marjorie Mastie, Washtenaw Intermediate School District, Ann Arbor, MI National Vocational Guidance Association; Dr. Donald Rosen, Iowa State University, Ames, Association for Measurement and Evaluation in Counseling and Development; and Mr. Jim Stiles, Hill Academic and Vocational Center, Lansing, MI, American School Counselor Association. These individuals provided valuable input to the project by generating ideas and reviewing drafts of the manual. Their assistance as advisors on this project is greatly appreciated.

Many others have contributed to this document. The Joint-Service Selection and Classification Working Group sponsored the project, closely read revisions, and obtained the necessary cooperation and approval from each of the Services. The working group consisted of Major William J. Strickland, Headquarters, U.S. Air Force (Chairman); Dr. Malcolm J. Ree, Air Force Human Resources Laboratory; Mr Louis A. Ruberton, Headquarters, Department of the Army; Dr. Clessen J. Martin, Army Research Institute for the Behavioral and Social Sciences; Mr. Charles R. Hoshaw, Office of the Chief of Naval Operations; Mr. Leonard Swanson, Navy Personnel Research and Development Center; Major Larry J. Jurica, Headquarters, U.S. Marine Corps; Dr. Milton H. Maier, Center for Naval Analyses; Lt. Colonel Joseph Mazziotta and Dr. Clarence McCormick, Headquarters, U.S. Military Entrance Processing Command;

FOREWORD

Dr. Robert Frey, Headquarters, U.S. Coast Guard; and Dr. Anita R. Lancaster, Office of the Assistant Secretary of Defense (Manpower, Installations and Logistics).

Policy oversight for the entire ASVAB program is provided by a Joint-Service steering group. Members of the group, representing the Department of Defense and the Military Services, include Dr. W. S. Sellman, Office of the Assistant Secretary of Defense (Manpower, Installations and Logistics); Major General B. B. Porter, Headquarters, Department of the Army; Rear Admiral A. J. Herberger, Office of the Chief of Naval Operations: Major General R. C. Oaks, Headquarters, U.S. Air Force; Brigadier General J. M. Mead, Headquarters, U.S. Marine Corps; and Brigadier General W. L. Vaught, U.S. Military Entrance Processing Command.

The contributions of the AACD staff who worked on this project also are gratefully acknowledged. The project director was Ms. Jill Garnett. Dr. Mary E. McCormac was the technical writer, Ms. Kathleen White was the research specialist, and Ms. Fran Gregerson and Ms. Carolyn Price were the project secretaries.

Finally, special recognition is due to Mr. John J. Mathews, Air Force Human Resources Laboratory. He served as the Contracting Officer's Representative throughout this project. His technical expertise aided immeasurably to the success of this manual.

Lawrence J. Korb

Lawrence J. Korb
Assistant Secretary of Defense
(Manpower, Installations and Logistics)

Multiple aptitude batteries have long been regarded as a fundamental component of a comprehensive counseling program. Results from these batteries help students assess their aptitudes and predict performance in academic and occupational areas, select career exploration activities, and make tentative career choices. The *Armed Services Vocational Aptitude Battery* (ASVAB), the most widely used multiple aptitude battery in the United States, provides measures of aptitudes for general academic areas and for career areas that encompass most of the civilian and military world of work.

1

INTRODUCTION TO ASVAB-14

Purposes

The ASVAB is a multiple aptitude battery designed for use with students in grades 10, 11, and 12, and in postsecondary schools. The test was developed to yield results that are useful to both schools and the military. Schools use ASVAB test results to provide educational and career counseling for students. The military services use the results to identify students who potentially qualify for entry into the military and for assignment to military occupational training programs.

Like other multiple aptitude batteries, the ASVAB measures developed abilities and predicts what a person could accomplish with training or further education. This test is designed especially to measure potential for occupations that require formal courses of instruction or on-the-job training. In addition, it provides measures of general learning ability that are useful for predicting performance in academic areas.

The ASVAB can be used for both military and civilian career counseling. Scores from this test are valid predictors of success in training programs for enlisted military occupations. Through the use of validity generalization techniques, predictions from military validity studies can be generalized to occupations that span most of the civilian occupational spectrum. Although some enlisted occupations are military specific, more than 80% of these occupations have direct civilian occupational counterparts.

Since the ASVAB was first used in high schools in 1968, it has been the subject of extensive research and has been updated periodically. Appendix A contains a brief history of the ASVAB and the various forms that have been used.

Key Features

ASVAB-14, introduced in the 1984-85 school year, contains several key features that were not included in previous forms. These key features include

- **improved usefulness in measuring vocational aptitudes:** In addition to yielding *academic composites* that provide measures of academic potential, ASVAB-14 supplies *occupational composites* that provide measures of potential for successful performance in four general career areas.
- **articulated career counseling resources:** ASVAB-14 is supported by extensive materials for both civilian and military career exploration.
- **nationally representative norms:** ASVAB-14 is normed on a nationally representative sample of 12,000 women and men, ages 16-23, who took the test in 1980.

Content

Subtests

The ASVAB consists of 10 subtests. Eight are power subtests that allow maximum performance with generous time limits. Two subtests are speeded.

Figure 1-1 presents the subtests, the time allowed for the administration of each subtest, the number of items per subtest, and the descriptions of the abilities or knowledge measured. The subtests are designed to measure general cognitive abilities and acquired information in specific areas. Sample questions for each subtest are provided in Appendix B.

GENERAL SCIENCE

11 Minutes

25 Items

Description

Measures knowledge of the physical and biological sciences

ARITHMETIC REASONING

36 Minutes

30 Items

Description

Measures ability to solve arithmetic word problems.

Figure 1-1.
ASVAB-14
CONTENT.

Testing Time	144 minutes
Administrative Time	36 minutes
Total Testing Time	180 minutes
Total Number of Items	334

WORD KNOWLEDGE

11 Minutes

35 Items

Description

Measures ability to select the correct meaning of words presented in context and to identify the best synonym for a given word.

PARAGRAPH COMPREHENSION

13 Minutes

15 Items

Description

Measures ability to obtain information from written passages.

NUMERICAL OPERATIONS

3 Minutes

50 Items

Description

Measures ability to perform arithmetic computations in a speeded context.

CODING SPEED

7 Minutes

84 Items

Description

Measures ability to use a key in assigning code numbers to words in a speeded context.

AUTO & SHOP INFORMATION

11 Minutes

25 Items

Description

Measures knowledge of automobiles, tools, and shop terminology and practices.

MATHEMATICS KNOWLEDGE

24 Minutes

25 Items

Description

Measures knowledge of high school mathematics principles.

MECHANICAL COMPREHENSION

19 Minutes

25 Items

Description

Measures knowledge of mechanical and physical principles and ability to visualize how illustrated objects work.

ELECTRONICS INFORMATION

9 Minutes

20 Items

Description

Measures knowledge of electricity and electronics.

Composites

ASVAB results are reported by composite scores. Composite scores are combinations of subtest scores that have demonstrated validity for predicting performance in academic and career areas.

ASVAB-14 yields *academic* and *occupational composite* scores:

1. The *academic composites* measure a student's potential for further formal education and predict performance in general areas requiring verbal and mathematical skills. The three *academic composites* are presented in Figure 1-2.
2. The *occupational composites* measure a student's potential for performance in four general career areas. The *occupational composites* are presented in Figure 1-3, along with the subtests that comprise them, and examples of civilian counterparts of military occupations that are associated with each composite.

Figure 1-2.
ACADEMIC
COMPOSITES.

ACADEMIC
ABILITY

Word Knowledge
and
Paragraph Comprehension
+
Arithmetic Reasoning

Purpose

Measures potential for further formal education

VERBAL

Word Knowledge
+
Paragraph Comprehension
+
General Science

Purpose

Measures capacity for verbal activities

MATH

Mathematics Knowledge
+
Arithmetic Reasoning

Purpose

Measures capacity for mathematical activities

Figure 1-3.
OCCUPATIONAL
COMPOSITES.

MECHANICAL & CRAFTS

Arithmetic Reasoning
+
Mechanical Comprehension
+
Auto & Shop Information
+
Electronics Information

Sample Occupational Grouping

Machinist
Auto Mechanic
Diesel Mechanic
Sheet Metal Worker
Carpenter

BUSINESS & CLERICAL

Word Knowledge
and
Paragraph Comprehension
+
Mathematics Knowledge
+
Coding Speed

Sample Occupational Grouping

Clerk Typist
Personnel Clerk
Transportation Agent
Data Entry Operator
Paralegal Assistant

ELECTRONICS & ELECTRICAL

Arithmetic Reasoning
+
Mathematics Knowledge
+
Electronics Information
+
General Science

Sample Occupational Grouping

TV and Radio Repairer
Automatic Equipment Technician
Instrument Mechanic
Line Installer-Repairer
Auto Electrician

HEALTH, SOCIAL, & TECHNOLOGY

Word Knowledge
and
Paragraph Comprehension
+
Arithmetic Reasoning
+
Mechanical Comprehension

Sample Occupational Grouping

Medical Service Technician
Cook
Police Officer
Dental Assistant
Flight Operation Specialist

(*Numerical Operations* is not found in any of these composites; it is used only by the military.)

The ASVAB and Counseling

Counselors and other educators can use ASVAB to help students plan future educational and career activities. ASVAB results will help students assess their aptitudes, and supporting ASVAB resources will help them learn generic career exploration and decision-making skills.

Assessing Aptitudes

ASVAB results enable students to assess their academic and vocational aptitudes. For students who are only beginning to consider different careers and for students who remain undecided about future careers, a careful examination of the ASVAB results can increase self-understanding and establish a realistic foundation for future career choices.

Exploring Careers

Career exploration is a process that usually takes place throughout most of a young person's school years. Students can learn generic career exploration skills through the use of *Exploring Careers: The ASVAB Workbook*. Each ASVAB test-taker receives a copy of the workbook along with their test results. See Chapter Six of this publication for information.

Career Decision Making

Helping students make intelligent and well-informed career decisions is a major goal of any educational and career counseling program. The availability of aptitude information is critical in that decision-making process. Students may use ASVAB results to make initial career decisions and to choose among specific occupational training options. Students considering military careers can use their ASVAB results along with the *Military Career Guide* to estimate their chances of qualifying for 134 enlisted career fields in all branches of the Armed Forces. See appendix E of this publication for complete information on the *Military Career Guide: Employment and Training Opportunities in the Military*.

In summary, ASVAB results can help students with different needs at various stages in the career development process. The ASVAB, therefore, should be considered an effective component of a comprehensive schoolwide testing program.

The ASVAB testing process is a cooperative venture. Although the military services are responsible for the actual administration of the test battery, counselor participation is important to help students make optimal use of test results. This joint effort results in responsibilities for both the counselor and the military throughout the testing process: before testing, at the time of testing, and after testing. Some of these responsibilities are specific to the counselor or to the military services, whereas some overlap. Throughout the process, teamwork is essential.

2

TESTING PROCEDURES

Planning for Testing

Counselors should consider a number of questions as they plan for ASVAB testing and determine how the ASVAB will most benefit students. Major questions are presented below. A response to each implies that a number of other decisions have been made. When a counselor can answer these questions, the ASVAB testing plan is well on its way.

Before Testing

- How will the school use the ASVAB results?
- What activities will be conducted to inform students and others about ASVAB testing?
- Who will take the ASVAB?
- What resources (e.g., printed materials, personnel) are needed from the military services to conduct these activities?
- When will the test be administered?
- How much time will be needed to administer the test?
- Where will students take the test?
- Who will serve as proctors?
- What recruiter contact option is appropriate for the students to be tested?
- Who else in the school or school district needs to be informed of the ASVAB testing plans?

After Testing

- Who (students, parents, and/or faculty) will receive feedback on the ASVAB testing?
- What type of feedback will be provided?
- What assistance will be provided to help students understand their scores?
- What counseling will be provided using the ASVAB results?
- Use *Exploring Careers: The ASVAB Workbook* to begin career exploration activities.
- What assistance, in the form of materials or resource people, is desired from the military after testing?

The sections that follow provide information that should help counselors answer these questions and prepare for testing. The suggested responsibilities of counselors and military personnel are summarized for the periods before, during, and after testing. In addition, relevant issues are discussed. Details on the roles of specific military institutions and resource people in the ASVAB testing process are presented in Appendix C. This information, along with the assistance of a military service representative, should provide the counselor with useful guidelines for planning.

Scheduling the Test

Summary of Activities

Before testing, **counselors**

- decide how they will use the ASVAB results with students;
- identify students to be tested;
- plan and schedule testing in conjunction with the military service representative;
- inform students of the scheduled test;
- inform parents of the scheduled test;
- arrange for school staff to serve as proctors, as feasible; and
- select the option for recruiter contact of their students.

Before testing, the **military service representatives**

- finalize the testing schedule in conjunction with counselors;
- provide ASVAB informational materials, as requested by counselors;
- participate in ASVAB awareness activities, as requested by counselors;
- confirm agreements on the recruiter contact option; and
- answer counselor's questions.

Considerations

School administrators and counselors first must decide how they will use the ASVAB results in their schools because that decision will influence the testing plans that follow. ASVAB results can help students in the areas of aptitude assessment, career exploration, and tentative career decision making. Counselors should consider which students will benefit from the information that the ASVAB provides and should determine at what grade level this information will be most useful to these students.

Increasing ASVAB Awareness

In any voluntary testing situation, it is important to generate student interest by acquainting students with the purposes and uses of the test. Parents and faculty also should be informed. The following resources and activities might be helpful in increasing awareness of the ASVAB and its uses.

Resource materials. Materials are available to explain the ASVAB to students, parents, and faculty. These materials can be obtained from the local military service representative or by calling the United States Military Entrance Processing Command (USMEPCOM) toll-free at 1-800-323-0513. (In Illinois, counselors can call collect at 312-688-4922.) These materials, summarized in Table 2-1, can be distributed prior to testing.

Table 2-1

ASVAB Materials

FOR STUDENTS:	
It's Your Future	A videotape describing ASVAB testing and its use for students.
Your Career Starts Here: A Student's Guide to the ASVAB	A booklet providing an overview of the ASVAB, sample test items, and interpretive information. A question and answer section is included.
Exploring Careers: The ASVAB Workbook	A student's workbook for career exploration.
Sample ASVAB Results Sheet	An actual results sheet illustrating the results of a hypothetical student.
Military Career Guide: Employment and Training Opportunities in the Military	A book containing information on military occupational and training opportunities. It is designed to allow students to use their ASVAB results to explore military occupations.
FOR PARENTS:	
Time of Decision: A Parent's Guide to the ASVAB	A brochure summarizing the ASVAB, including a question and answer section.
FOR COUNSELORS AND OTHER EDUCATORS:	
ASVAB: A Brief Guide for Counselors and Educators	A booklet providing specific information on ASVAB-14: content, test scores, and technical information. A question and answer section is included.
Technical Supplement to the Counselor's Manual for ASVAB-14 (1985)	A manual describing both the psychometric properties of the ASVAB and supporting research
ASVAB Reference Center	A three-ring loose-leaf binder that holds ASVAB publications.

Resource people. Representatives of the military services are available to speak at school functions, such as assemblies, career nights, and PTA meetings. The local military service representative should be contacted for further details.

ASVAB awareness session. An awareness session, conducted with a group of students prior to testing, allows the counselor the opportunity to discuss general ASVAB information as well as school-specific considerations. The counselor might want to invite a representative of the military services to participate in the presentation. A counselor also might want to conduct similar sessions with parents and faculty. Appropriate discussion topics include the following:

- the value of aptitude testing, in general, and the use of the ASVAB in the information-gathering and career exploration processes;
- the school's intended uses of ASVAB results;
- the military services' uses of ASVAB results;
- the roles of the military and school personnel in the testing process;
- the school's selected option for recruiter contact of 11th and 12th graders (or postsecondary students);
- question and answer session; and
- additional announcements;

1. Students must agree to sign the Privacy Act Statement (Figure 2-1) on the back of the answer sheet packet in order to receive their test results. Tenth graders will not be contacted by recruiters, but they must sign the statement in order to receive their test scores.

1. **AUTHORITY**
10 USC 3013, 10 USC 5013, 10 USC 5063, 10 USC 8013, EO 9397

2. **PRINCIPAL PURPOSES**
Student ASVAB results are used by schools for career and academic counseling and by the Armed Services for recruiting.

3. **ROUTINE USES**
Student ASVAB results are used by schools for career and academic counseling, and curriculum planning. Test results will be released to the recruiting services only for students at the eleventh grade or higher and only with the express permission of the school. Test results are used by the recruiting services to identify persons eligible for voluntary enlistment and for research. Individual test scores, identified by student name and social security number, are retained by the Defense Department for two years after the test date. The individual identifying information is removed from all test records that are retained more than two years after the test date.

4. **VOLUNTARY DISCLOSURE AND EFFECT ON INDIVIDUALS NOT PROVIDING INFORMATION**
Disclosure of your social security number and of test responses is voluntary. In signing below, you agree to the release of test results as described above. If you do not sign below, your test will not be scored or otherwise processed.

SIGNATURE ______________________

DATE ______________________

Figure 2-1. Privacy Act Statement.

2. A student's involvement with the test will not be used in any way for Selective Service registration.

3. An opportunity will be provided for students to discuss the results with a counselor when the results are returned to the school.

Arrangements for Testing

Scheduling. The counselor and the local military service representative should work together to schedule the testing session. The counselor should consider such things as the school's calendar, other tests that will occur during the school year, and activities that might compete for the students' attention.

Testing time. Administering the battery requires a 3-hour block of time. If large numbers of students are tested (100 or more), additional time may be required to collect the materials and to ensure that test security is maintained. Therefore, a block of 3 hours and 15 minutes is advisable.

Room arrangements. The counselor arranges for testing facilities. Well-lighted, ventilated, comfortable rooms are needed. These rooms should be free from extraneous noise and interruptions. Each student should have a flat work surface that is large enough for the testing materials.

Proctors. In order to create a familiar atmosphere and enhance the performance of the students, counselors and school personnel are encouraged to serve as proctors. The military services also can provide proctors for the test.

Counselor codes. If students' results are distributed to different counselors, counselor codes can be used. In this case, the school must assign a two-digit counselor code to each counselor involved. On the day of testing, students must be informed of the counselor codes, and they must enter the appropriate code on their answer sheets. When the ASVAB results are returned, the student results sheets will be grouped alphabetically, within grade, by counselor code. This code also can be used to group student results by other school-designated divisions, such as homeroom.

Options for recruiter contact. Counselors need time to distribute and interpret results to students before the student is contacted by the military about the test. Consequently, it is routine practice for students' scores to be withheld from the recruiting services for a minimum of 7 days after the scores are mailed to the school. School officials may wish to have additional time to discuss the results with students before there is any recruiter contact. Various options are available to the schools. Prior to testing, school officials inform the military service representative of their desired option.

Option Number	**Description**
1.	No special instructions. Release results to recruiting services 7 days after school products are mailed.
2.	Release results to recruiters 60 days after school products are mailed. No recruiter contact prior to that time.
3.	Release results to recruiters 90 days after school products are mailed. No recruiter contact prior to that time.
4.	Release results to recruiters 120 days after school products are

mailed. No recruiter contact prior to that time.

5. Release results to recruiters at the end of the school year. No recruiter contact prior to that time.
6. Release results to recruiting services 7 days after school products are mailed. No telephone solicitations based on the listing of student results.
7. Not valid for enlistment purposes. Results not released to recruiting services.
8. No recruiter contact from this listing of student results. Results not released to recruiting services.

These options apply only to recruiter contact efforts resulting from ASVAB-14 testing. Eleventh and 12th graders and postsecondary students may be contacted by military recruiters independent of the ASVAB testing. In addition, recruiting personnel encourage high school students to graduate before applying for enlistment into the military services. The recruiter must notify the school if a nongraduate tries to enlist.

Day of Testing

Summary of Activities

On the day of testing, **counselors**

- provide facilities for testing;
- provide proctors, as feasible; and
- introduce the test.

On the day of testing, **ASVAB representatives**

- provide testing materials;
- provide a test administrator;
- provide proctors, as needed; and
- take student answer sheets for scoring.

Distributing the Results

Summary of Activities

After testing, **counselors**

- distribute test results to students;
- help students understand their results sheets;
- counsel students regarding their test results;
- encourage students to share their test results with parents;
- notify parents of high school students tested that testing occurred and that the results are available to the students;
- answer the questions of parents;
- assist students in obtaining relevant occupational and educational information from military recruiters and other sources; and
- place ASVAB results in students' school records.

After testing, **ASVAB representatives**

- score student answer sheets;
- distribute test results to the school;
- distribute *Exploring Careers: The ASVAB Workbook*
- provide controls for the distribution, access, and retention of ASVAB data on individual students;
- provide ASVAB resource materials, as requested by counselors; and
- provide technical support, as requested by counselors.

Considerations

Distribution to the School

ASVAB results. The Military Entrance Processing Stations (MEPS) process the student answer sheets locally. The results are returned to the school within 30 days.

Resources for interpretation. This manual contains information and resources for the counselor's use in helping students understand their ASVAB results. Resource people also are available to provide technical support to counselors in the interpretation of test results. The military service representative should be contacted for further details.

Access to Test Results

The military services established formal procedures to control the distribution, access, and retention of ASVAB data on individual students. ASVAB personal information and scores are recognized as the private information of the individual and are handled accordingly. Information on an individual's identity and related test information will not be released to any agency outside of the student's school system, the Department of Defense, and the Coast Guard. This information is retained by the military services for 2 school years. Test scores and demographic data required for research purposes may be kept by the military for a longer period. These data are used to support studies for the characteristics, reliability, and validity of the various forms of the ASVAB and to support the development of improved versions of the battery. Personal identification information, however, is deleted from research records.

The technical qualities of a test are important to consider when selecting a test and interpreting its results. This chapter summarizes the technical characteristics of the ASVAB. The *Technical Supplement to the Counselor's Manual for ASVAB-14 (1985)* contains a complete description of the psychometric properties of the ASVAB and a review of relevant ASVAB research.

3

TECHNICAL CHARACTERISTICS

The Reference Population

ASVAB results are expressed as percentile scores referenced to appropriate subsamples of a nationally representative group of nearly 12,000 young women and men, ages 16-23, who took ASVAB-8a between July and October of 1980. This administration, sponsored by the Department of Defense and conducted by the National Opinion Research Center of the University of Chicago, marked the first time that a *nationally representative* sample of young people had ever been given a vocational aptitude battery. The sample, or Reference Population, had already been selected and was under study in the National Longitudinal Survey of Youth Labor Force Behavior, sponsored by the Departments of Labor and Defense.

The sample contained approximately equal proportions of young women and men, including individuals from urban and rural areas and from all major census regions. Blacks, Hispanics, and economically disadvantaged Whites were oversampled to obtain adequate numbers for subgroup analyses. The sample was then weighted to represent accurately the national population distribution for all groups. Breakdowns of the sample, in unweighted and weighted forms, and comparisons of these breakdowns to the national population are presented in Table 3-1.

Table 3-1

Comparison of the ASVAB Reference Population to the National Population of 16-23 Year Olds

	N in Reference Population		Percent of Reference Population (Weighted)	Percent of National Population of 16-23 Year Olds
Subgroup	Unweighted	Weighted		
White †				
Men	3,531	13,393,060	41	41
Women	3,496	12,946,550	39	39
Total	7,027	26,339,610	80	80
Black				
Men	1,511	2,278,490	7	7
Women	1,511	2,276,440	7	7
Total	3,022	4,554,930	14	14
Hispanic				
Men	902	1,031,890	3	3
Women	927	1,014,310	3	3
Total	1,829	2,046,200	6	6
Reference Population				
Men	5,944	16,703,440	51	51
Women	5,934	16,237,300	49	49
Total	11,878	32,940,740	100	100

Note. National population percentages are from U.S. Bureau of the Census, 1979.
† "White" includes all non-Blacks and non-Hispanics.

The norm groups against which students are compared on the ASVAB are

- The *Grade 10 Norm Group* consists of approximately 3878 students in grade 10 with scores statistically related to the Reference Population in a separate norming study.
- The *Grade 11 Norm Group* consists of approximately 1,300 students in Grade 11.
- The *Grade 12 Norm Group* consists of approximately 1,200 students in Grade 12.
- The *Two-Year College Norm Group* consists of approximately 750 students in two-year postsecondary schools.
- The *Youth Population Norm Group* consists of approximately 9,000 women and men, representative of all American young people ages 18-23.

Information on the composition of the norm groups, by sex, is presented in Appendix D. Complete information on the sex and racial/ethnic group composition of the Reference Population and subsamples, and norm tables for each, are included in the *Technical Supplement to the Counselor's Manual for ASVAB-14 (1985)*. Additional information on the collection of the norming data can be found in *Profile of American Youth: 1980 Nationwide Administration of the Armed Services Vocational Aptitude Battery* (U.S. Department of Defense, 1982b).

Parallelism of Forms

ASVAB-14 is parallel to ASVAB Forms 8 (a and b), 9(a and b), and 10(a and b), which the military has administered to service applicants since 1980 (Ree, Mathews, Mullins, & Massey, 1982; Ree, Mullins, Mathews, & Massey, 1982). The parallelism of different versions of the ASVAB is important to the Department of Defense to ensure that a percentile score on one test form can be interpreted in the same way as a score on another. Parallelism is also important to users of ASVAB-14 because it permits them to draw on the sizeable existing body of research using ASVAB Forms 8, 9, and 10. Estimates of the reliability and validity of the current ASVAB can be computed from data on these parallel forms of the test battery.

Reliability

One of the critical technical qualities of a test is its reliability. There are several methods for estimating a test's reliability, including the computation of alternate-form reliability coefficients and measures of internal consistency. Alternate-form reliability coefficients for the ASVAB-14 composites are shown in Table 3-2; the coefficients for the ASVAB composites range between .84 and .93 for women and between .88 and .95 for men. Internal-consistency measures (Kuder-Richardson Formula 20 reliability coefficients) are presented, along with more detailed alternate-form reliability data and subsample size information, in Appendix D.

Table 3-2

Alternate-Form Reliability Coefficients by ASVAB Composite

Composite	Range of Reliability Coefficients
Academic Ability	.88 - .94
Verbal	.89 - .94
Math	.90 - .94
Mechanical & Crafts	.84 - .93
Business & Clerical	.90 - .94
Electronics & Electrical	.90 - .94
Health, Social, & Technology	.91 - .95

Note. The reliability coefficient ranges were calculated from data for service applicants in 1983 who took (a) parts of Form 8a and all of Form 9(a or b) or (b) parts of Form 8a and all of Form 10(a or b). Each range includes 10 coefficients, which reflect the 10 subsamples for which norms are available: women, men, and combined sexes for Grades 11 and 12 and two-year colleges, and combined sexes for the Youth Population.

Validity

One of the central concerns of counselors with regard to testing is whether the tests they use are valid. That is, do the tests accurately measure what they are purported to measure, and are the results applicable to the intended population? For the ASVAB, validity is a matter of whether the test accurately forecasts success in future educational programs and predicts performance in various military and civilian occupations.

Military Validity Studies of the ASVAB

Since the introduction of forms parallel of ASVAB-14 in 1980, the military services have collected criterion data for individuals entering hundreds of military specialties. Extensive research demonstrates that the ASVAB composites used in military selection and classification predict performance in training for a variety of military occupations (Booth-Kewley, 1983; Maier & Truss, 1983; Rossmeissl, Martin, & Wing, 1983; Wilbourn, Valentine, & Ree, 1984). For example, validity coefficients for electrical/mechanical equipment repair specialties range from .36 to .74; those for communication specialties range from .36 to .52; those for data processing specialties range from .39 to .77; and those for clerical and supply specialties range from .53 to .73. These coefficients have been corrected for restriction in range. The complete set of validity data, gathered on 11 Army specialties, 47 Navy ratings, 50 Marine Corps specialties, and 70 Air Force specialties, is provided in the *Test Manual for the Armed Services Vocational Aptitude Battery* (U.S. Department of Defense, 1984a). The composites used with ASVAB-14 have been shown to predict performance in more than 50 military technical training courses. The median coefficient for each composite is over .60 indicating that the

ASVAB-14 composites are valid predictors of training performance for military occupations (U.S. Department of Defense, 1985b; Maier & Truss, 1984).

A joint-service research program has been underway since 1981 to develop measures of on-the-job performance (U.S. Department of Defense, 1981, 1982a, 1983, 1984b, 1985a, 1986a, 1987). Results indicate that ASVAB predicts military job performance about as well as it predicts military training performance with (corrected) correlations between ASVAB scores and job performance ranging from .23 to .73.

Civilian Validity Studies of the ASVAB

Previous forms of the ASVAB have been validated in civilian settings against high school and postsecondary school course grades; data are available on the ability of ASVAB-5 to predict success in high school and postsecondary school courses (Wilfong, 1980). Because the correlations between the *academic composites of* ASVAB Forms 5 and 14 are above .90, the results from this research can be generalized to ASVAB-14.

Moreover, there is analytic support for the validity of ASVAB-14 for civilian occupations from two sources: (a) a fairly recent development in testing research called validity generalization (Schmidt & Hunter, 1977; Hunter, Schmidt, & Jackson, 1982), and (b) a project that linked all military occupational specialties to their civilian occupational counterparts.

A basic premise involving validity generalization is that validity coefficients from similar tests can be compared and averaged across time and settings to achieve an overall statement of validity.

The *General Aptitude Test Battery* (GATB) used by the U.S. Employment Service has a data base of more than 500 validation studies on a representative sample of 12,000 jobs contained in the *Dictionary of Occupational Titles* (DOT) (U.S. Department of Labor, 1983a, 1983b) and has long been accepted as a valid predictor of job performance in the civilian sector. Hunter (1983) demonstrated the psychometric similarity between ASVAB and GATB, and since psychometrically equivalent tests have the same validity, concluded that the validity of ASVAB to predict performance in civilian occupations can be inferred from the GATB validity data. More recently, Hunter, Crosson, and Freedman (1985) determined that ASVAB occupational composites are highly valid predictors of both military and civilian job performance.

A major study, completed by the Department of Defense in 1984, applied job analysis techniques to link *DOT* occupational codes and the various Military Occupational Specialty (MOS) codes used by the military services and the Coast Guard to classify their military personnel. Civilian occupational counterparts were found for approximately 80% of enlisted occupations and 60% of officer occupations. The findings of this project, available in the *Military-Civilian Occupational Crosswalk Manual* (U.S. Department of Defense, 1986b), can be used in conjunction with ASVAB validity data for military specialties and the validity generalization of the GATB to the ASVAB to draw inferences concerning the validity of

ASVAB composites for predicting performance in related civilian occupations.

Test Bias and Differential Prediction

The Army and Air Force have reported separate validation data for Blacks and Whites, and for women and men who took ASVAB Form 8, 9, or 10. For those occupations for which adequate samples were available, no major sex or race differences were found in predictions based upon ASVAB scores (Fast & Martin, 1984). Similarly, in reviewing data relating scores on an earlier ASVAB form to performance in 43 Air Force technical training schools, Bock and Moore (1984) concluded that there was no evidence that the use of the ASVAB resulted in biased selection favoring Whites to Blacks or men to women. A more detailed discussion of the equity of the ASVAB for personnel selection and job placement can be found in Eitelberg, Laurence, Waters, and Perelman (1984), and in Bock and Mislevy (1981).

Summary of ASVAB Validity

The ASVAB is a valid predictor of successful performance in educational programs and in various military and civilian occupations. Scores from the ASVAB predict success in high school and postsecondary school courses, as well as military occupational training programs. The usefulness of ASVAB scores for predicting performance in civilian occupations is supported by (a) the abundance of data linking ASVAB scores to military occupations; (b) analyses linking civilian and military occupations, and (c) the strong relationship between scores on the ASVAB and those on the GATB, a test battery with extensive validity data for civilian workers. In addition, scores from the ASVAB do not systematically underestimate the performance of minority group members or women.

ASVAB-14 Composites

Three different approaches were used in developing the seven composites reported for ASVAB-14. *Verbal* and *Math* were derived through factor analysis. The third academic composite, *Academic Ability*, used historically as an indicator of general learning ability, was derived by combining the ASVAB verbal and quantitative subtests that relate to performance in formal education. Although not distinct from the *Verbal* and *Math* composites in a psychometric sense, *Academic Ability* has proved to be a useful measure for predicting performance in many educational settings.

The four *occupational composites* were derived through regression analysis of those ASVAB subtest scores that predicted performance in military training courses. In essence, this analysis identified the combinations of subtests that are predictive of success in military training for the types of occupational specialities related to the four *occupational composites*. Psychometric data, including standard errors of measurement and composite intercorrelations, appear in Appendix D and in the *Technical Supplement to the Counselor's Manual for ASVAB-14 (1985).*

ASVAB results are mailed to schools within 30 days after testing. Results are provided in reports that facilitate the interpretation of scores and the use of results by schools. This chapter describes the materials used to report results and explains how these materials can be used to interpret ASVAB scores.

4

ASVAB RESULTS

Report Forms

Schools receive test results in two different report formats: (a) the *ASVAB Results Sheet*, one for each student tested, and (b) the *ASVAB Test Score Results Roster*, one for each school where testing occurred.

ASVAB Results Sheet

The *ASVAB Results Sheet* consists of three detachable sections: *Your ASVAB Results*, the *Counselor Summary*, and the *Parent Postcard*. The results sheets usually are organized alphabetically, by grade. Before scoring occurs, counselors select the method by which they would like the results sheets organized for return to the school: by specific student subgroups (e.g., all students assigned to one counselor) or sorted alphabetically, by grade. The front and back of the student results sheet are shown in Figures 4-1 and 4-2, respectively.

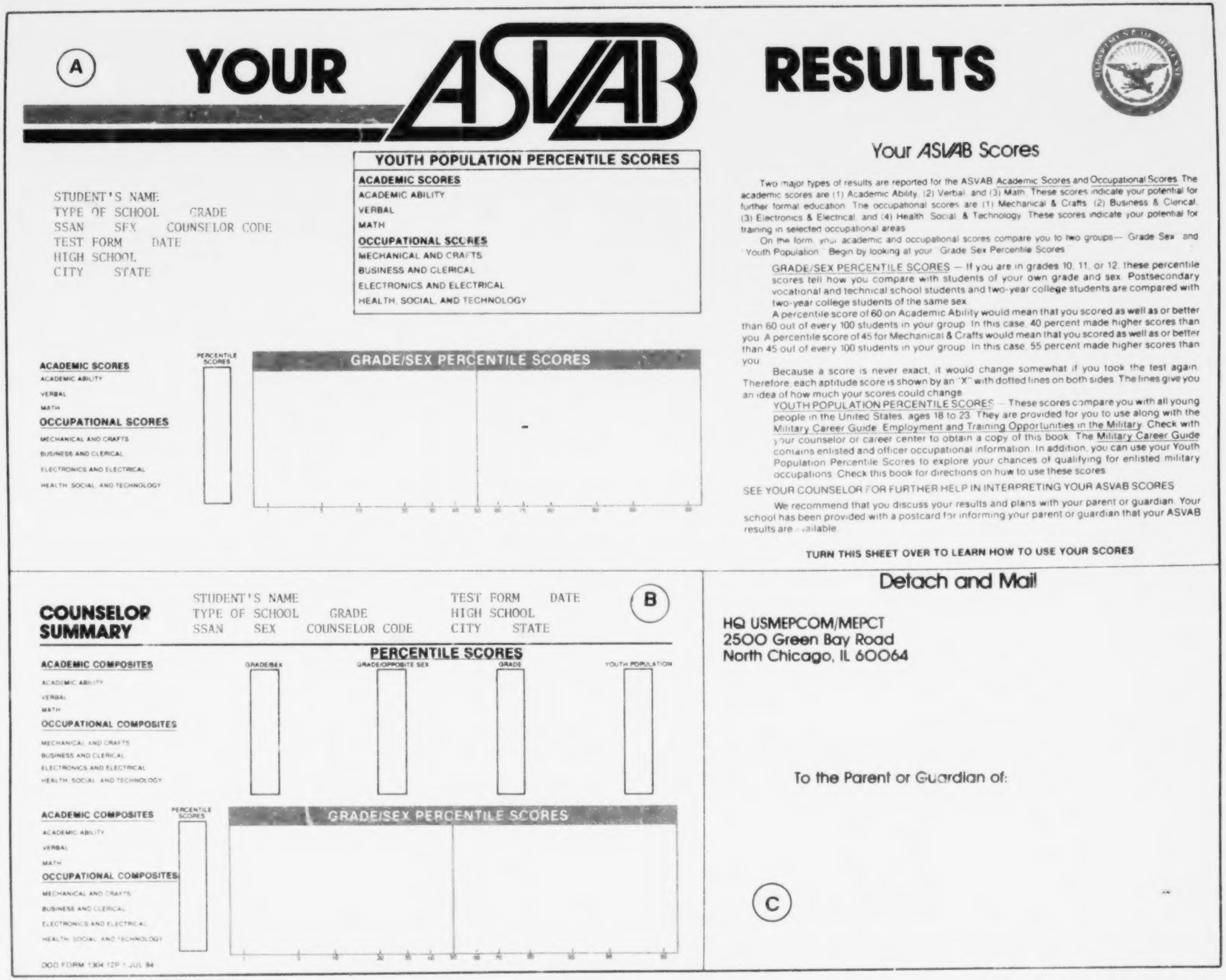
Your ASVAB Results

The student's section of the results sheet is called *Your ASVAB Results*. The information printed on the front of this section, shown in Part A of Figure 4-1, contains

- student identification information (name, grade, social security number, sex, and school);
- percentile scores for *academic* and *occupational composites* by Youth Population;
- percentile scores for *academic* and *occupational composites* by grade/sex;
- graphic representations of student same-sex percentile scores in a profile format using confidence bands to indicate probable range of true composite scores; and
- an interpretive guide to help students understand their results.

The back of the student's section, shown in Part A of Figure 4-2, contains

- a brief discussion of aptitude testing and the use of ASVAB-14 results.



Ⓐ YOUR ASVAB RESULTS

STUDENT'S NAME
TYPE OF SCHOOL GRADE
SSAN SEX COUNSELOR CODE
TEST FORM DATE
HIGH SCHOOL
CITY STATE

YOUTH POPULATION PERCENTILE SCORES

ACADEMIC SCORES
ACADEMIC ABILITY
VERBAL
MATH
OCCUPATIONAL SCORES
MECHANICAL AND CRAFTS
BUSINESS AND CLERICAL
ELECTRONICS AND ELECTRICAL
HEALTH, SOCIAL, AND TECHNOLOGY

ACADEMIC SCORES
ACADEMIC ABILITY
VERBAL
MATH
OCCUPATIONAL SCORES
MECHANICAL AND CRAFTS
BUSINESS AND CLERICAL
ELECTRONICS AND ELECTRICAL
HEALTH, SOCIAL, AND TECHNOLOGY

PERCENTILE SCORES

GRADE/SEX PERCENTILE SCORES

Your ASVAB Scores

Two major types of results are reported for the ASVAB Academic Scores and Occupational Scores. The academic scores are (1) Academic Ability, (2) Verbal, and (3) Math. These scores indicate your potential for further formal education. The occupational scores are (1) Mechanical & Crafts, (2) Business & Clerical, (3) Electronics & Electrical, and (4) Health, Social, & Technology. These scores indicate your potential for training in selected occupational areas.

On the form, your academic and occupational scores compare you to two groups— Grade/Sex and Youth Population. Begin by looking at your Grade/Sex Percentile Scores.

GRADE/SEX PERCENTILE SCORES — If you are in grades 10, 11, or 12, these percentile scores tell how you compare with students of your own grade and sex. Postsecondary vocational and technical school students and two-year college students are compared with two-year college students of the same sex.

A percentile score of 60 on Academic Ability would mean that you scored as well as or better than 60 out of every 100 students in your group. In this case, 40 percent made higher scores than you. A percentile score of 45 for Mechanical & Crafts would mean that you scored as well as or better than 45 out of every 100 students in your group. In this case, 55 percent made higher scores than you.

Because a score is never exact, it would change somewhat if you took the test again. Therefore, each aptitude score is shown by an "X" with dotted lines on both sides. The lines give you an idea of how much your scores could change.

YOUTH POPULATION PERCENTILE SCORES — These scores compare you with all young people in the United States, ages 18 to 23. They are provided for you to use along with the Military Career Guide, Employment and Training Opportunities in the Military. Check with your counselor or career center to obtain a copy of this book. The Military Career Guide contains enlisted and officer occupational information. In addition, you can use your Youth Population Percentile Scores to explore your chances of qualifying for enlisted military occupations. Check this book for directions on how to use these scores.

SEE YOUR COUNSELOR FOR FURTHER HELP IN INTERPRETING YOUR ASVAB SCORES

We recommend that you discuss your results and plans with your parent or guardian. Your school has been provided with a postcard for informing your parent or guardian that your ASVAB results are available.

TURN THIS SHEET OVER TO LEARN HOW TO USE YOUR SCORES

COUNSELOR SUMMARY

STUDENT'S NAME
TYPE OF SCHOOL GRADE
SSAN SEX COUNSELOR CODE
TEST FORM DATE
HIGH SCHOOL
CITY STATE

Ⓑ

PERCENTILE SCORES

GRADE/SEX
GRADE/OPPOSITE SEX
GRADE
YOUTH POPULATION

ACADEMIC COMPOSITES
ACADEMIC ABILITY
VERBAL
MATH
OCCUPATIONAL COMPOSITES
MECHANICAL AND CRAFTS
BUSINESS AND CLERICAL
ELECTRONICS AND ELECTRICAL
HEALTH, SOCIAL, AND TECHNOLOGY

ACADEMIC COMPOSITES
ACADEMIC ABILITY
VERBAL
MATH
OCCUPATIONAL COMPOSITES
MECHANICAL AND CRAFTS
BUSINESS AND CLERICAL
ELECTRONICS AND ELECTRICAL
HEALTH, SOCIAL, AND TECHNOLOGY

PERCENTILE SCORES

GRADE/SEX PERCENTILE SCORES

DOD FORM 1304 12P 1 JUL 84

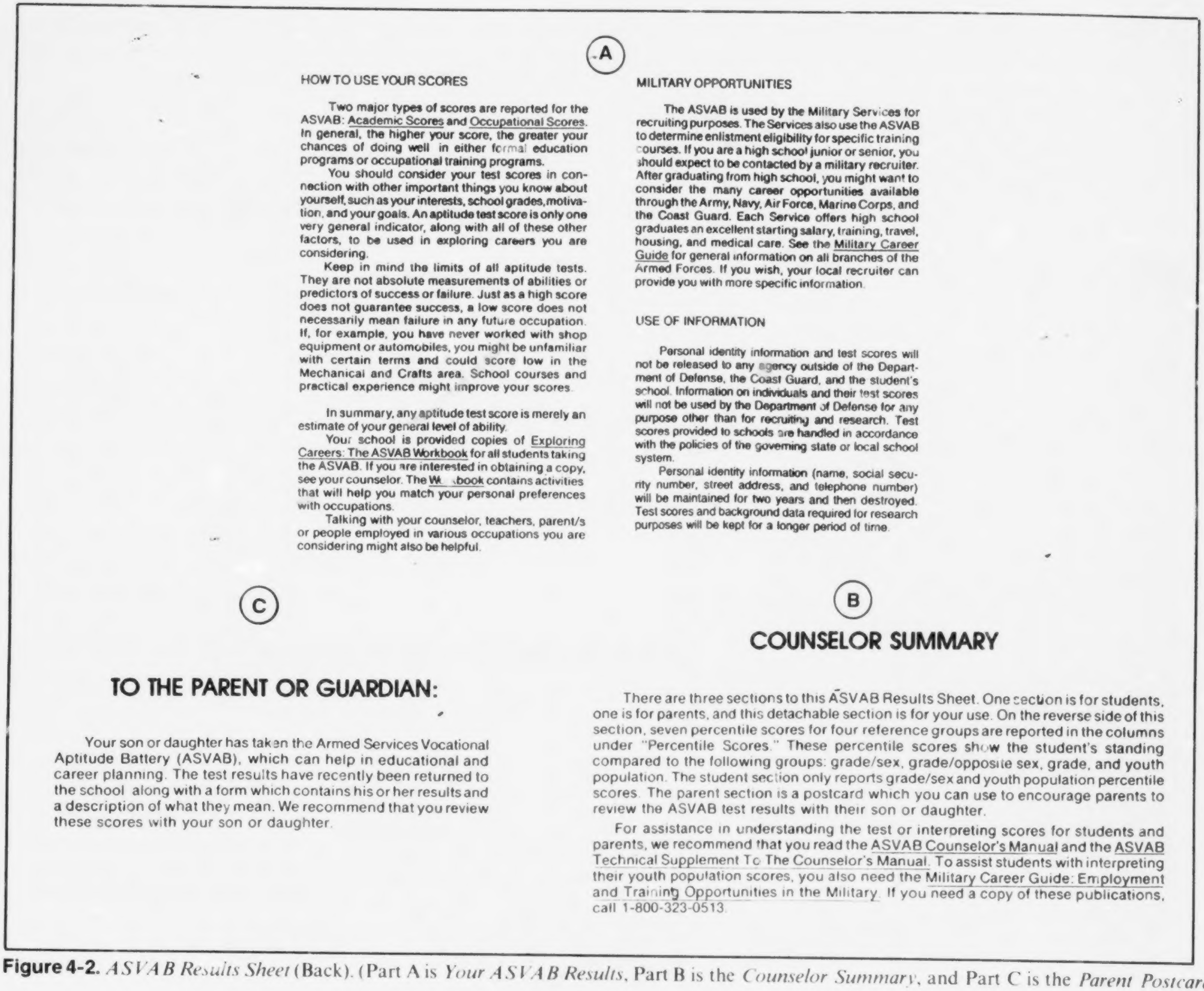
Detach and Mail

HQ USMEPCOM/MEPCT
2500 Green Bay Road
North Chicago, IL 60064

To the Parent or Guardian of:

Ⓒ

Figure 4-1. *ASVAB Results Sheet* (Front). (Part A is *Your ASVAB Results*, Part B is the *Counselor Summary*, and Part C is the *Parent Postcard*.)



Ⓐ

HOW TO USE YOUR SCORES

Two major types of scores are reported for the ASVAB: Academic Scores and Occupational Scores. In general, the higher your score, the greater your chances of doing well in either formal education programs or occupational training programs.

You should consider your test scores in connection with other important things you know about yourself, such as your interests, school grades, motivation, and your goals. An aptitude test score is only one very general indicator, along with all of these other factors, to be used in exploring careers you are considering.

Keep in mind the limits of all aptitude tests. They are not absolute measurements of abilities or predictors of success or failure. Just as a high score does not guarantee success, a low score does not necessarily mean failure in any future occupation. If, for example, you have never worked with shop equipment or automobiles, you might be unfamiliar with certain terms and could score low in the Mechanical and Crafts area. School courses and practical experience might improve your scores.

In summary, any aptitude test score is merely an estimate of your general level of ability.

Your school is provided copies of Exploring Careers: The ASVAB Workbook for all students taking the ASVAB. If you are interested in obtaining a copy, see your counselor. The Workbook contains activities that will help you match your personal preferences with occupations.

Talking with your counselor, teachers, parent/s or people employed in various occupations you are considering might also be helpful.

MILITARY OPPORTUNITIES

The ASVAB is used by the Military Services for recruiting purposes. The Services also use the ASVAB to determine enlistment eligibility for specific training courses. If you are a high school junior or senior, you should expect to be contacted by a military recruiter. After graduating from high school, you might want to consider the many career opportunities available through the Army, Navy, Air Force, Marine Corps, and the Coast Guard. Each Service offers high school graduates an excellent starting salary, training, travel, housing, and medical care. See the Military Career Guide for general information on all branches of the Armed Forces. If you wish, your local recruiter can provide you with more specific information.

USE OF INFORMATION

Personal identity information and test scores will not be released to any agency outside of the Department of Defense, the Coast Guard, and the student's school. Information on individuals and their test scores will not be used by the Department of Defense for any purpose other than for recruiting and research. Test scores provided to schools are handled in accordance with the policies of the governing state or local school system.

Personal identity information (name, social security number, street address, and telephone number) will be maintained for two years and then destroyed. Test scores and background data required for research purposes will be kept for a longer period of time.

Ⓒ

TO THE PARENT OR GUARDIAN:

Your son or daughter has taken the Armed Services Vocational Aptitude Battery (ASVAB), which can help in educational and career planning. The test results have recently been returned to the school along with a form which contains his or her results and a description of what they mean. We recommend that you review these scores with your son or daughter.

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COUNSELOR SUMMARY

There are three sections to this ASVAB Results Sheet. One section is for students, one is for parents, and this detachable section is for your use. On the reverse side of this section, seven percentile scores for four reference groups are reported in the columns under "Percentile Scores." These percentile scores show the student's standing compared to the following groups: grade/sex, grade/opposite sex, grade, and youth population. The student section only reports grade/sex and youth population percentile scores. The parent section is a postcard which you can use to encourage parents to review the ASVAB test results with their son or daughter.

For assistance in understanding the test or interpreting scores for students and parents, we recommend that you read the ASVAB Counselor's Manual and the ASVAB Technical Supplement To The Counselor's Manual. To assist students with interpreting their youth population scores, you also need the Military Career Guide: Employment and Training Opportunities in the Military. If you need a copy of these publications, call 1-800-323-0513.

Figure 4-2. *ASVAB Results Sheet* (Back). (Part A is *Your ASVAB Results*, Part B is the *Counselor Summary*, and Part C is the *Parent Postcard*.)

Counselor Summary

The *Counselor Summary* is a record of the test results for each student tested (Part B of Figures 4-1 and 4-2). After test interpretation, it can be filed in the student's cumulative record. The *Counselor Summary* reports

- student identification information (name, grade, social security number, sex, and school);
- percentile scores for *academic* and *occupational composites* by grade/sex;
- percentile scores for *academic* and *occupational composites* by grade/oppposite sex;
- percentile scores for *academic* and *occupational composites* by grade;
- percentile scores for *academic* and *occupational composites* by Youth Population;
- graphic representations of student same-sex percentile scores in a profile format using confidence bands to indicate probable range of true composite scores; and
- on the back, general information about the *ASVAB Results Sheet.*

Parent Postcard

It is important that parents are informed that their daughter or son has received ASVAB results so that these results may be discussed at home. One section of the *ASVAB Results Sheet*, the *Parent Postcard*, is a card that can be mailed to parents and guardians by the school. The *Parent Postcard*, shown in Part C of Figures 4-1 and 4-2, informs parents and guardians that their daughter's or son's ASVAB results have been received by the school. Test scores are not presented on the postcard.

ASVAB Test Score Results Roster

The *ASVAB Test Score Results Roster* presents, alphabetically within grade, test scores of all students who took the ASVAB at a particular testing session and provides a statistical summary of scores by grade and school. The roster provides information to help counselors and school officials develop local norms and analyze test results.

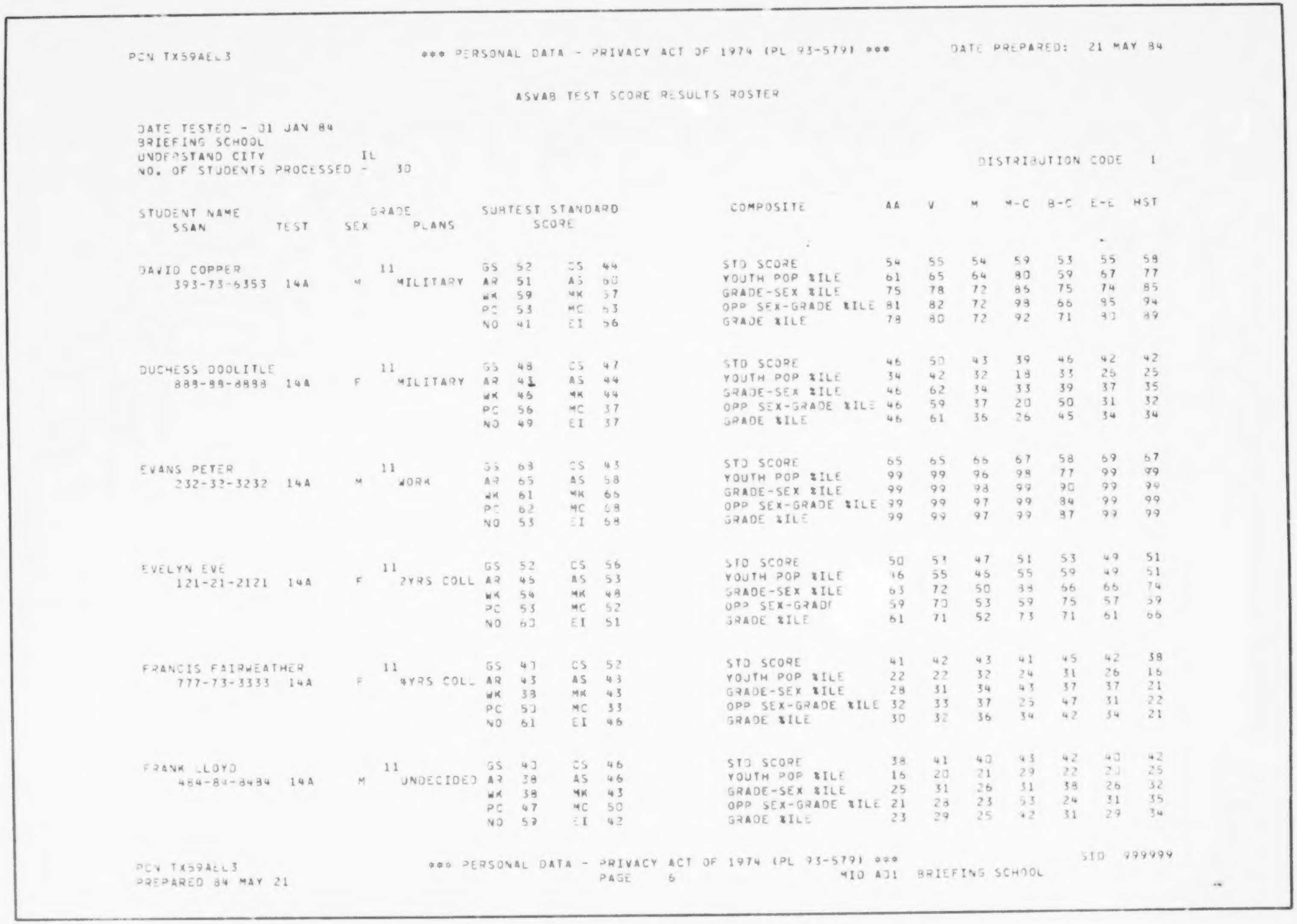
The first page of the *ASVAB Test Score Results Roster* contains school identification information. The alphabetical listing, shown in Figure 4-3, begins on the second page of the roster. For each student tested, the alphabetical listing includes the following information:

- student identification information (name, grade, social security number, sex, and school);
- student self-reported career plans following graduation;
- standard scores (based on a mean of 50 and a standard deviation of 10) for subtests;

- standard scores (based on a mean of 50 and a standard deviation of 10) for *academic* and *occupational composites;*
- percentile scores for *academic* and *occupational composites* by Youth Population;
- percentile scores for *academic* and *occupational composites* by grade/sex;
- percentile scores for *academic* and *occupational composites* by grade/opposite sex; and
- percentile scores for *academic* and *occupational composites* by grade.

Statistical reports of scores, by grade and school, (shown in Figure 4-4), appear on the last page(s) of the roster. The statistics provided are

- mean standard scores and standard deviations for subtests;
- mean standard scores and standard deviations for *academic* and *occupational composites*;
- median percentile scores and semi-interquartile ranges (Q) for *academic* and *occupational composites* by Youth Population; and
- median percentile scores and semi-interquartile ranges (Q) for *academic* and *occupational composites* by grade.



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PCN TX59AEL3            *** PERSONAL DATA - PRIVACY ACT OF 1974 (PL 93-579) ***         DATE PREPARED:  21 MAY 84

                                         ASVAB TEST SCORE RESULTS ROSTER

DATE TESTED - 01 JAN 84
BRIEFING SCHOOL
UNDERSTAND CITY              IL                                                                DISTRIBUTION CODE   1
NO. OF STUDENTS PROCESSED -    30

STUDENT NAME                 GRADE        SUBTEST STANDARD          COMPOSITE            AA    V     M   M-C  B-C  E-E  MST
    SSAN          TEST    SEX     PLANS         SCORE

DAVID COPPER                  11          GS  52    CS  44          STD SCORE             54    55    54    59    53    55    58
    393-73-6353  14A       M     MILITARY AR  51    AS  60          YOUTH POP %ILE        61    65    64    80    59    67    77
                                          WK  59    MK  57          GRADE-SEX %ILE        75    78    72    85    75    74    85
                                          PC  53    MC  63          OPP SEX-GRADE %ILE    81    82    72    98    66    95    94
                                          NO  41    EI  56          GRADE %ILE            78    80    72    92    71    90    89

DUCHESS DOOLITLE              11          GS  48    CS  47          STD SCORE             46    50    43    39    46    42    42
    888-88-8888  14A       F     MILITARY AR  41    AS  44          YOUTH POP %ILE        34    42    32    18    33    25    25
                                          WK  46    MK  44          GRADE-SEX %ILE        46    62    34    33    39    37    35
                                          PC  56    MC  37          OPP SEX-GRADE %ILE    46    59    37    20    50    31    32
                                          NO  49    EI  37          GRADE %ILE            46    61    36    26    45    34    34

EVANS PETER                   11          GS  63    CS  43          STD SCORE             65    65    66    67    58    69    67
    232-32-3232  14A       M     WORK     AR  65    AS  58          YOUTH POP %ILE        99    99    96    98    77    99    99
                                          WK  61    MK  66          GRADE-SEX %ILE        99    99    98    99    90    99    99
                                          PC  62    MC  68          OPP SEX-GRADE %ILE    99    99    97    99    84    99    99
                                          NO  53    EI  58          GRADE %ILE            99    99    97    99    87    99    99

EVELYN EVE                    11          GS  52    CS  56          STD SCORE             50    53    47    51    53    49    51
    121-21-2121  14A       F    2YRS COLL AR  45    AS  53          YOUTH POP %ILE        46    55    45    55    59    49    51
                                          WK  54    MK  48          GRADE-SEX %ILE        63    72    50    38    66    66    74
                                          PC  53    MC  52          OPP SEX-GRADF         59    70    53    59    75    57    59
                                          NO  60    EI  51          GRADE %ILE            61    71    52    73    71    61    66

FRANCIS FAIRWEATHER           11          GS  40    CS  52          STD SCORE             41    42    43    41    45    42    38
    777-73-3333  14A       F    4YRS COLL AR  43    AS  43          YOUTH POP %ILE        22    22    32    24    31    26    16
                                          WK  38    MK  43          GRADE-SEX %ILE        28    31    34    43    37    37    21
                                          PC  50    MC  33          OPP SEX-GRADE %ILE    32    33    37    25    47    31    22
                                          NO  61    EI  46          GRADE %ILE            30    32    36    34    42    34    21

FRANK LLOYD                   11          GS  40    CS  46          STD SCORE             38    41    40    43    42    40    42
    484-84-8484  14A       M    UNDECIDED AR  38    AS  46          YOUTH POP %ILE        16    20    21    29    22    20    25
                                          WK  38    MK  43          GRADE-SEX %ILE        25    31    26    31    38    26    32
                                          PC  47    MC  50          OPP SEX-GRADE %ILE    21    28    23    53    24    31    35
                                          NO  59    EI  42          GRADE %ILE            23    29    25    42    31    29    34

PCN TX59AEL3                 *** PERSONAL DATA - PRIVACY ACT OF 1974 (PL 93-579) ***                      SID  999999
PREPARED 84 MAY 21                            PAGE    6              MID A31   BRIEFING SCHOOL
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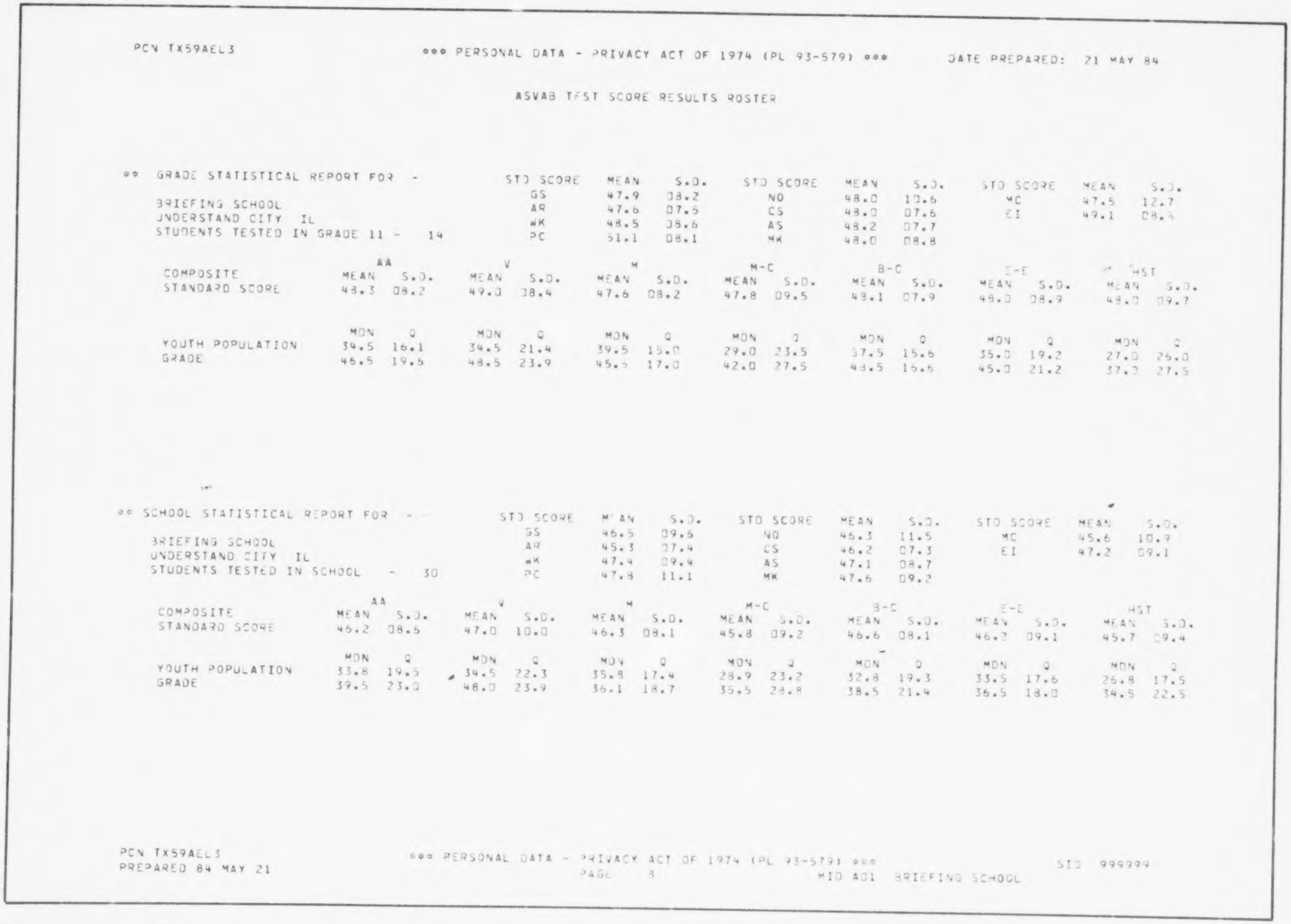
Figure 4-3. *ASVAB Test Score Results Roster*, alphabetical listing, with hypothetical data.



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PCN TX59AEL3             *** PERSONAL DATA - PRIVACY ACT OF 1974 (PL 93-579) ***        DATE PREPARED:  21 MAY 84

                                        ASVAB TEST SCORE RESULTS ROSTER


** GRADE STATISTICAL REPORT FOR  -              STD SCORE   MEAN    S.D.    STD SCORE   MEAN    S.D.    STD SCORE   MEAN    S.D.
                                                   GS       47.9    08.2       NO       48.0    10.6       MC       47.5    12.7
   BRIEFING SCHOOL                                 AR       47.6    07.5       CS       48.0    07.6       EI       49.1    08.6
   UNDERSTAND CITY  IL                             WK       48.5    08.6       AS       48.2    07.7
   STUDENTS TESTED IN GRADE 11 -    14             PC       51.1    08.1       MK       48.0    08.8

                            AA             V              M             M-C            B-C            E-E            HST
    COMPOSITE         MEAN   S.D.    MEAN   S.D.    MEAN   S.D.    MEAN   S.D.    MEAN   S.D.    MEAN   S.D.    MEAN   S.D.
    STANDARD SCORE    48.3  08.2     49.0  08.4     47.6  08.2     47.8  09.5     48.1  07.9     48.0  08.9     48.0  09.7


                       MDN    Q      MDN    Q       MDN    Q       MDN    Q       MDN    Q       MDN    Q       MDN    Q
    YOUTH POPULATION  34.5  16.1     34.5  21.4     39.5  15.0     29.0  23.5     37.5  15.6     35.0  19.2     27.0  26.0
    GRADE             46.5  19.6     48.5  23.9     45.5  17.0     42.0  27.5     48.5  16.6     45.0  21.2     37.0  27.5




** SCHOOL STATISTICAL REPORT FOR  -             STD SCORE   MEAN    S.D.    STD SCORE   MEAN    S.D.    STD SCORE   MEAN    S.D.
                                                   GS       46.5    09.6       NO       46.3    11.5       MC       45.6    10.9
   BRIEFING SCHOOL                                 AR       45.3    07.4       CS       46.2    07.3       EI       47.2    09.1
   UNDERSTAND CITY  IL                             WK       47.4    09.4       AS       47.1    08.7
   STUDENTS TESTED IN SCHOOL    -    30            PC       47.8    11.1       MK       47.6    09.2

                            AA             V              M             M-C            B-C            E-E            HST
    COMPOSITE         MEAN   S.D.    MEAN   S.D.    MEAN   S.D.    MEAN   S.D.    MEAN   S.D.    MEAN   S.D.    MEAN   S.D.
    STANDARD SCORE    46.2  08.6     47.0  10.0     46.3  08.1     45.8  09.2     46.6  08.1     46.2  09.1     45.7  09.4

                       MDN    Q      MDN    Q       MDN    Q       MDN    Q       MDN    Q       MDN    Q       MDN    Q
    YOUTH POPULATION  33.8  19.5     34.5  22.3     35.8  17.4     28.9  23.2     32.8  19.3     33.5  17.6     26.8  17.5
    GRADE             39.5  23.0     48.0  23.9     36.1  18.7     35.5  28.8     38.5  21.4     36.5  18.0     34.5  22.5




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PREPARED 84 MAY 21                          PAGE    8                   MID A01  BRIEFING SCHOOL
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Figure 4-4. *ASVAB Test Score Results Roster*, statistical reports, with hypothetical data.

Understanding the Results

The Role of Aptitude Testing

Aptitude testing often stimulates further career exploration, and the results of multiple aptitude test batteries contribute to realistic and informed career decision making. ASVAB results, like the results of other multiple aptitude batteries, can be interpreted to answer such questions as:

- Should a student consider being a medical technician?
- Should a student explore various occupations in the electronics field?
- Does a student have the potential to do well in a dental technician training program?

Multiple aptitude batteries are not intended to select specific careers for individual students. In addition, these tests cannot answer such specific questions as:

- Will a student be a good aircraft systems mechanic?
- Will a student enjoy working with computers?
- Will a student be successful working in the nuclear engineering field?

At best, only partial answers to these questions can be formulated. For example, the *Mechanical & Crafts* score on the ASVAB provides an index of the individual's ability to understand and apply mechanical principles. This is one of the aptitudes required of aircraft systems mechanics. Many other factors, however, which cannot be measured by a multiple aptitude battery, should be considered by a student before deciding upon a specific career path.

Percentiles

The ASVAB results are reported to counselor and student as percentile scores. Percentiles indicate a student's relative standing on a composite in comparison to a reference group. For example, a 12th grader who scored at the 65th percentile by grade on the *Verbal* composite scored equal to or better than 65% of a nationally representative sample of 12th graders who took the ASVAB in 1980. Thirty-five percent of the 12th graders in the sample performed better on the *Verbal* composite.

Counselors receive four sets of percentile scores for the *academic* and *occupational composites.* These percentile scores are based on norms developed from subsamples of the Reference Population. Counselors receive scores that compare each student tested to the following norm groups:

- individuals of the same sex in the same grade;
- individuals of the opposite sex in the same grade;

- individuals in the same grade; and
- individuals in the Youth Population.

Each student tested receives two sets of percentile scores that compare that student to

- individuals in the Youth Population; and
- individuals of the same sex in the same grade.

While all students receive scores by grade/sex, the grade level on which these scores are based is determined differently for different groups. Eleventh and 12th graders receive scores based on separate 11th-grade and 12th-grade norms. Tenth grade norms were developed in a study designed to statistically represent the nationally representative sample. Postsecondary students receive scores based on norms for students who attend two-year colleges.

Confidence Bands

No test can provide a completely accurate indication of what it is designed to measure. Similarly, an ASVAB percentile is not an exact representation of an individual's true score on a particular composite. Confidence bands, therefore, are used to illustrate the range of test scores within which an examinee's true score probably lies.

On the ASVAB, the confidence band corresponds to plus or minus 1 standard error of measurement from the individual's obtained composite score. In 68% of the cases, this confidence band includes the individual's true score. The range is shown by a dashed line, and an X indicates the individual's obtained score (shown in Figure 4-5).

On the ASVAB, score differences are more likely to be apparent between scores on *Verbal* and *Math* than among scores on the four *occupational composites. Verbal* and *Math*, by definition, consist of different types of subtests. All *occupational composites*, however, include subtests that require math and reading abilities. Because of this similarity in subtest composition, confidence bands for scores on the *occupational composites* tend to overlap.

To identify an individual's higher and lower levels of aptitudes, the positions of confidence bands that surround that individual's scores should be examined. When confidence bands for scores overlap substantially, the scores should be interpreted as basically equivalent. When confidence bands for scores do not overlap substantially, a difference between scores should be noted.

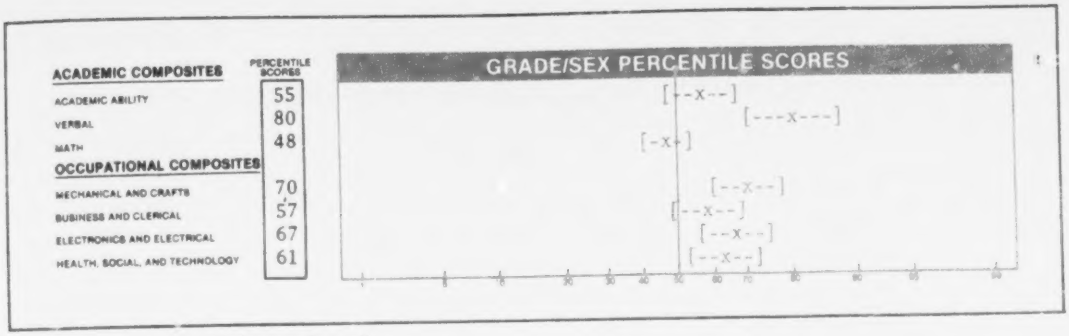


Figure 4-5. Confidence bands.

In Figure 4-5, the student's grade/sex percentile on the *Verbal* composite is higher than the percentiles on *Math* and *Academic Ability*. The confidence band surrounding this score does not overlap with the confidence bands surrounding scores on *Math* and *Academic Ability*. The student's score on *Verbal*, therefore, is significantly higher than scores obtained on the other *academic composites*. On the *occupational composites*, the score obtained on *Mechanical & Crafts* is highest. The confidence band surrounding this score, however, overlaps substantially with the confidence bands surrounding scores on the other *occupational composites*. This overlap indicates that no statistically significant differences exist among these scores.

Confidence bands are provided on the *ASVAB Results Sheet* for scores based on grade/sex norms only. Information needed to determine confidence bands for scores based on other norm groups (e.g., grade/opposite sex, grade, Youth Population) is available in the *Technical Supplement to the Counselor's Manual for ASVAB-14 (1985)*.

Standard Scores

Standard scores for ASVAB subtests and composites appear on the alphabetical listing of the results roster shown in Figure 4-3. These standard scores have a mean of 50 and a standard deviation of 10. The ASVAB standard scores are based on the Youth Population norm group described in chapter 3. These scores enable subtests with different numbers of items to be weighted equally and combined to form composites. Occasionally, a student's composite score may not appear representative of that individual's aptitude. The counselor may want to review the student's standard scores for the subtests included in that composite, as reported on the results roster. Very often a relatively low score on one subtest can indicate that a student had difficulty with specific types of questions or following directions for specific tasks.

Separate-Sex Norms

The performance of women and men varies on some ASVAB composites. On the *academic composites*, these differences are not substantial. On the *occupational composites*, however, grade norms may mask important differences in the performances of women and men.

For example, an 11th grader's score could vary on the *Mechanical & Crafts* composite, depending on the norm group used for comparison.

Standard Score	**Percentile by Norm Group**	
50	69	All 11th graders
	84	Women
	54	Men

It is not surprising that these differences exist. The *Electronics & Electrical* and *Mechanical & Crafts* composites include subtests that rely heavily on previous exposure to mechanical, electrical, or auto and shop information. More men than women typically have gained this exposure by the time they are of high school age. This does not necessarily mean that women cannot learn this information and should be discouraged from entering occupations in related areas. Conversely, women traditionally have performed better than men on coding speed tasks. Similarly, this does not necessarily mean that men should be discouraged from entering occupations where coding speed is important. Instead, more care needs to be taken in the interpretation of these scores in order to provide both sexes with a wider, fairer, and more realistic picture of their aptitudes. Separate-sex norms can facilitate this interpretation of ASVAB scores, especially in areas where one sex traditionally has performed better than the other.

For example, if the 11th grader mentioned earlier is a woman, separate-sex norms could tell the following about her *Mechanical & Crafts* composite score:

- She scored at the 84th percentile for 11th-grade women. She knows, therefore, that she compares favorably with her female counterparts in terms of her aptitude for training related to the *Mechanical & Crafts* composite. Given an interest in a career within this area, she feels encouraged to explore specific occupations.
- She expects to have to compete with a predominantly male population to obtain and hold a job in this area. If the student's counselor provides her opposite-sex score to her, the student will understand that she scored at the 54th percentile compared to men. This does not mean she should abandon her investigation of occupations related to this composite. Given her interest in this area, it could mean, however, that she will have to take relevant courses, gain relevant experience, and apply extra effort to compete effectively and to achieve her goal.

The use of separate-sex norms, in this case, enables the student to assess realistically her aptitude for occupations related to the *Mechanical & Crafts* composite. Separate-sex norms indicate how she compares to other 11th-grade women and how she compares to those 11th-grade men with whom she would most likely compete for jobs.

In summary, the following guidelines should be considered when selecting the appropriate scores to discuss with particular students:

- Students receive only same-sex scores on their results sheets in order to reduce confusion. Counselors also receive opposite-sex and grade scores for students on the counselor section of the results sheet. When opposite-sex or grade data are relevant to an individual student, the counselor should share that information with the student.

- If students are interested in occupations in fields where the work is performed primarily by individuals of their own sex, same-sex scores give students a realistic picture of their competitive abilities.
- If students want to pursue nontraditional career fields where the work is performed primarily by members of the opposite sex, same-sex scores should be interpreted in light of opposite-sex information. Students need a realistic picture of where they stand in relation to their competition.
- If students want to investigate career fields where the work is typically performed by both women and men, combined-sex (grade) scores should be consulted.

Youth Population Scores

Students receive a set of scores on their results sheets comparing them to the Youth Population norm group. The Youth Population norm group is a sample of women and men, ages 18-23, weighted to be nationally representative. These scores are intended for use with students who are interested in the military. The Youth Population scores are designed to be used with the *Military Career Guide: Employment and Training Opportunities in the Military*, and the Occu-Find Chart in *Exploring Careers*. When used with this guide, ASVAB scores based on this norm group enable students to predict their chances of qualifying for at least one military specialty within an occupation. Additional information on the *Military Career Guide* and its use is found in Appendix E, "*Military Career Guide*," and Handout 1, "Using the *Military Career Guide*."

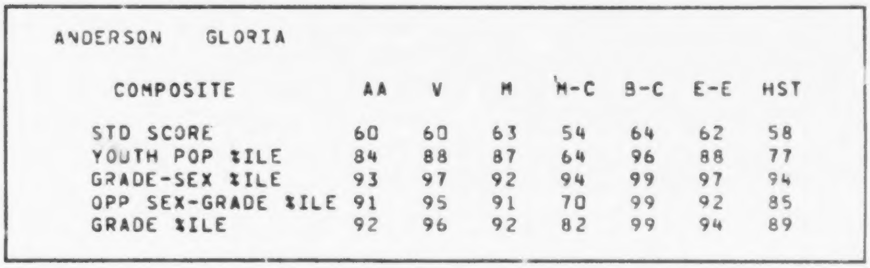
Grade and School Statistical Reports

The grade and school statistical reports, provided on the *ASVAB Test Score Results Roster*, enable counselors to develop local norms and to compare students' scores to those of other students in the school. A counselor may wish, for example, to compare the scores of an 11th grader with those of other 11th graders in the school who took the ASVAB during the same testing session. This comparison can be made using:

- the student's standard scores, provided on the alphabetical listing, and the means and standard deviations, provided on the report for students tested in the 11th grades; or
- the student's percentile scores, provided on the alphabetical listing and on the *ASVAB Results Sheet*, and median composite scores and semi-interquartile ranges, provided in the 11th-grade report.

To make this comparison using standard scores, the counselor can create bands for Grade 11 by adding and subtracting standard deviation units to the mean scores for 11th graders. If the student's score is higher than 1 standard deviation above the mean, that score is well above average compared to the other 11th graders in the school who took the test; if the score is below 1 standard deviation from the mean, the score is well below average. Assuming the distribution of scores for 11th graders in the school is approximately normal, then 68% of all scores will fall within plus or minus 1 standard deviation from the mean. Virtually all scores will fall within plus or minus 3 standard deviations from the mean.

Figure 4-6 shows an entry from the *ASVAB Test Score Results Roster* for an 11th-grade woman. This student, for example, received a standard score of 60 on *Academic Ability*.



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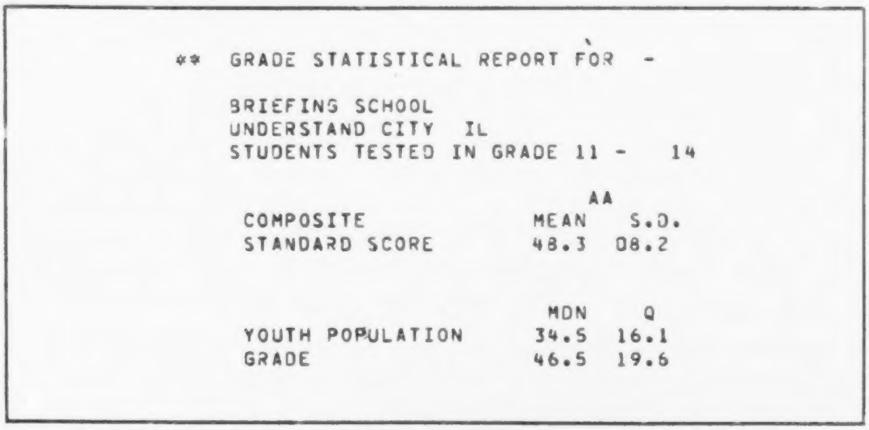
ANDERSON    GLORIA

  COMPOSITE              AA    V     M    M-C   B-C   E-E   HST

 STD SCORE               60    60    63    54    64    62    58
 YOUTH POP %ILE          84    88    87    64    96    88    77
 GRADE-SEX %ILE          93    97    92    94    99    97    94
 OPP SEX-GRADE %ILE      91    95    91    70    99    92    85
 GRADE %ILE              92    96    92    82    99    94    89
```

Figure 4-6. Sample student listing for composite scores from the *ASVAB Test Score Results Roster.*

In order to compare this student's performance on *Academic Ability* with that of other students in her grade and school who took the ASVAB during the same testing session, her counselor can refer to the grade statistical report as shown in Figure 4-7.



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**   GRADE STATISTICAL REPORT FOR  -

     BRIEFING SCHOOL
     UNDERSTAND CITY  IL
     STUDENTS TESTED IN GRADE 11 -    14

                                   AA
      COMPOSITE                MEAN    S.D.
      STANDARD SCORE           48.3    08.2


                                MDN      Q
      YOUTH POPULATION         34.5    16.1
      GRADE                    46.5    19.6
```

Figure 4-7. Sample grade statistical report from the *ASVAB Test Score Results Roster* for *Academic Ability.*

If the counselor wants to compare this student's *Academic Ability* scores with other 11th graders using standard scores, the following procedure is followed:

1. Locate the mean standard score on the roster for *Academic Ability* for 11th graders. In this example, the score is 48.3.
2. Add and subtract the standard deviation for the composite to the mean score to establish a range. In this case, the standard deviation is 8.2, and the range, corresponding to plus and minus 1 standard deviation from the mean, is 40.1-56.5.
3. See where the individual student's score falls in relation to this range. Here, the student's score of 60 is more than 1 standard deviation from the mean, which shows that the student's score on *Academic Ability* is well above average compared to other 11th graders in her school.

Using this procedure, the counselor may compare all scores for this student with mean scores of 11th graders in her school or all students in her school who took the ASVAB at the same session.

To make this comparison using percentiles, the counselor first must decide which norm group is most relevant (i.e., Youth Population or grade). After selecting the norm group, the counselor can create bands for the group by adding and subtracting the semi-interquartile range provided for each median composite score. Fifty percent of all scores will lie within this range. If the student's score is above this range, the score is above 75% of the scores for 11th graders in the school. If the student's score is below this range, it is below 25% of the scores obtained by 11th graders.

Using the example provided previously in Figures 4-6 and 4-7, the student received a percentile score of 92 for her grade on *Academic Ability*. The median percentile score, by grade, for 11th graders at her school on this composite, is 46.5; the semi-interquartile range is 19.6. Fifty percent of all scores, therefore, fall within the range of 26.9-66.1. Since this student's score is above this range, her score is above 75% of the scores of others in her grade and school on *Academic Ability*.

Information on the *ASVAB Test Score Results Roster* also can be used to compare average scores for grades and for schools. If the ASVAB-14 is given annually, the reports can be used to make longitudinal comparisons from one year to another. In order to make these comparisons, ranges for mean scores, using standard deviation units, or ranges for median scores, using semi-interquartile ranges, have to be used to determine if reliable differences between scores exist. If ranges overlap substantially, the scores should be interpreted as basically equivalent. If ranges do not overlap substantially, a difference in scores should be noted. Because the norms used for ASVAB-14 differ from the norms used for ASVAB-5, results from these forms cannot be compared in this way.

Obviously, comparisions between groups that are similar have more meaning than comparisons between groups with few shared characteristics. For example, if all 11th graders in a comprehensive high school are tested in the fall, the performance of this group can be compared with the performance of (a) future groups of 11th graders attending that school who are also tested in the fall and (b) 11th graders who attend similar schools that test all students in the fall of Grade 11. Group comparisons are meaningless unless the groups are comparable.

This chapter presents basic information regarding the use of ASVAB test results for career counseling purposes. Research has shown that encouraging students to be actively involved in the interpretation process is highly desirable; therefore, this chapter concludes with examples provided to illustrate techniques for counselors to maximize student involvement and understanding in the interpretation of ASVAB results.

5

INTERPRETATION

Reporting the Results

Since test results can be confusing to students and parents, counselors play an important role in providing information to explain the results. Unlike many teachers and parents who are not trained in test interpretation, counselors are in a unique position to interpret test results, to explain the limitations of test scores, and to integrate test data with other student information. Integrating aptitude test data with other student information can facilitate self-awareness and stimulate the career exploration of students.

Supplementary materials, in the form of handouts, are provided in the back of this manual to assist the counselor in using the ASVAB for career counseling. Most of these materials are written for students, but some are appropriate for use with parents, teachers, and counselors.

Reporting Results to Students

The counselor should (a) discuss characteristics of the test, (b) explain results and significant findings (e.g., differences among scores), (c) provide students with an opportunity to examine and discuss test results as reported on the results sheet, and (d) suggest steps for career exploration in light of information from the test and other sources. Several models are presented as options for reporting ASVAB results.

Large Groups

Large groups can be used for test interpretation. The major reason for presenting test results in large groups is efficiency—reaching large numbers of people in a brief period of time. Test scores can be distributed and interpreted by a counselor, counselor/teacher team, or counselor/military team. If requested, the military will provide assistance from persons qualified to interpret ASVAB results (i.e., test specialists, education coordinators, and education specialists). The local military service representative should be contacted for further details.

An agenda for a large group interpretation of the ASVAB should include the following topics:

- explanation of what the ASVAB measures;
- distribution of the ASVAB student results sheet and *Exploring Careers;*
- instruction in understanding the student results sheet;
- guidelines to follow in interpreting the results;
- directions for locating information about civilian careers;
- directions for locating information about military careers; and
- scheduling of small groups or individual follow-up sessions.

Audiovisual aids and student handouts are particularly useful for test interpretation sessions with large groups. Examples of student materials that can be used are presented in Handout II, "Explanation of ASVAB Results"; Handout III, "ASVAB Scores"; and Handout IV, "The Military Recruiter." Handout II is designed to be used in ASVAB group interpretation sessions to explain the students' results. Handout III illustrates sample items from each subtest by composite. Handout IV may be useful for 12th graders and postsecondary students interested in the military. Counselors also may wish to refer to Appendix E. *"Military Career Guide,"* for more information about military careers.

Small Groups

Distributing test results to students in a small group provides the opportunity for more interaction. Students typically feel less inhibited about asking questions, and the counselor can provide more personalized responses. A small group meeting also provides the counselor with an opportunity to encourage young people to talk about career goals among peers.

In addition to the topics covered in a large group session, the counselor may wish to discuss hypothetical cases. This strategy would (a) illustrate test interpretation, (b) demonstrate how to use ASVAB results in combination with other student information, and (c) relate ASVAB results to appropriate career exloration activities available in the school. A small group interpretation session allows student-initiated concerns and peak interest areas to surface. If the counselor conducts subsequent group meetings, students can identify problems in locating information about careers they are exploring. Membership in an ongoing group also permits the sharing of career plans. Activities, such as the ones provided in Handout V, "Know Yourself," and Handout VI, "Questions for the Future," could be completed as homework between sessions.

Individual Interviews

Counselors may elect to schedule individual interviews for all students who have taken the ASVAB, students who request an individual session, or students in need of career guidance assistance. For those who have not yet received any explanation of their ASVAB results, counselors may want to begin with an agenda similar to that suggested in the "Large Groups" section of this chapter. For students who have previously met in a group setting, the individual interview provides the opportunity for further assistance in understanding the meaning and implications of test results.

Prior to an individual interview, the counselor should study the student's test results. Such preparation will facilitate the interpretation, especially until the counselor becomes familiar with the ASVAB.

During individual interviews, the counselor should assess the student's understanding of the test results. Individual interviews may reveal that test scores do not appear to portray an accurate picture of a student's developed abilities. In these cases, additional formal testing or informal acquisition of information is recommended. Individual interviews also can be used to formulate guidelines for career exploration and planning.

Reporting Results to Parents

Many parents would like to assist their children in educational and career planning. Research consistently documents that high school students and graduates rank their parents ahead of teachers and counselors as important career-planning resources (Educational Testing Service, 1980; Florida Department of Education, 1979). To help parents in this role, some counselors conduct a group meeting or make appointments with parents of tested students to discuss ASVAB results and their implications for career development.

Some counselors invite parents to accompany students to meetings where test results are discussed. These meetings often are held in the evening to accommodate working parents. Discussion with parents can help resolve discrepancies between the student's measured ability level and student and parent expectations.

Reporting Results to Teachers

Although the ASVAB may be of particular interest to certain teachers, all teachers should be encouraged to learn about the aptitudes of students and how aptitude scores relate to career planning. Counselors have a responsibility not only to make standardized aptitude test scores available to teachers, but also to explain fully the scores to teachers if needed. Whenever possible, teacher-counselor conferences or group meetings should be scheduled to accomplish these objectives.

Guidelines

Some general guidelines for interpreting the ASVAB are provided here to serve as a frame of reference for counselors.

1. Offer students the opportunity to have their scores interpreted. Providing students with test scores is not the same as interpreting them.
2. Before beginning an interpretation session, determine the needs of the audience (e.g., students, parents). Identify the questions the audience is likely to ask (e.g., "Does this mean I should be a mechanic?").
3. Before interpreting the results, restate the purpose for which the test was administered. Remember the limits of aptitude tests. They are not absolute measures of abilities. They do provide estimates of general levels of acquired abilities.
4. Interpret clearly and simply. Define confusing terms (e.g., norms, composites) and avoid evaluative terms (e.g., weakness). Use sample test items to illustrate what was measured (use Handout III, "ASVAB Scores"). Use graphics whenever possible.
5. Clarify the difference between *academic composites* and *occupational composites* in terms of what they measure.
6. Examine the grade/sex percentile scores before looking at the other percentile scores.

7. Examine differences between composite scores to determine if any differences are significant (i.e., little overlap of error bands).
8. Explain the two highest and lowest scores.
9. Remember that there is overlap in the subtest composition of most *occupational composites* but no overlap in the subtest composite of *Verbal* and *Math* scores; consequently, there may appear to be larger differences between *Verbal* and *Math* than between other composites.
10. Explain why the Youth Population scores appear on *Your ASVAB Results.* Students interested in the military should be introduced to the *Military Career Guide.* Show the students how to use the ASVAB Occupational Composite Index in the *Military Career Guide* to identify occupations for which they may qualify for military training.
11. Interpretation based on norm group references should be modified in light of the student's age. A student's grade/sex and Youth Population scores are likely to be different because of the differences in the composition of the norm groups: The Youth Population norm group consists of women and men, ages 18 to 23, whereas the grade/sex norm group consists of individuals in the same grade and of the same sex. Consequently, Youth Population scores will usually be lower than grade/sex scores for 10th, 11th, and 12th graders.
12. Explain scores in simple terms that help students understand appropriate educational and occupational possibilities based on their aptitudes.
13. Help students link ASVAB results to occupational information. Using Handout VII ("Linking Your ASVAB Scores to Specific Occupations"), the *Military Career Guide*, or *Exploring Careers*, it may be appropriate to encourage students to develop a list of occupations that would relate to the student's abilities, interests, and work values. The counselor may need to help the student begin this assignment by suggesting several occupations to consider.
14. If students are interested in nontraditional careers, review grade/opposite-sex scores. Students do not have a copy of the grade/opposite-sex scores; however, these scores are provided on the *Counselor Summary.* Be prepared to ask students if they want to know how they compare to students of the opposite sex. When interpreting these scores to students, remind them of the concept of standard error of measurement. For example, these percentile scores give an idea of how one compares to a specific norm group but if the ASVAB was taken again, one might score several points higher or lower.
15. Remember that an aptitude test is only one tool to be used in career exploration. Integrate ASVAB data with other data—formal (e.g., interest inventories, achievement scores, grades) and informal (e.g., teacher reports). Other data are especially important for students who score at about the same level on all ASVAB composites.

16. Provide a summary at the close of the session that includes the student's educational and occupational options. This summary should synthesize the ASVAB results and integrate these findings into a picture of the individual from which tentative occupational exploration may begin.

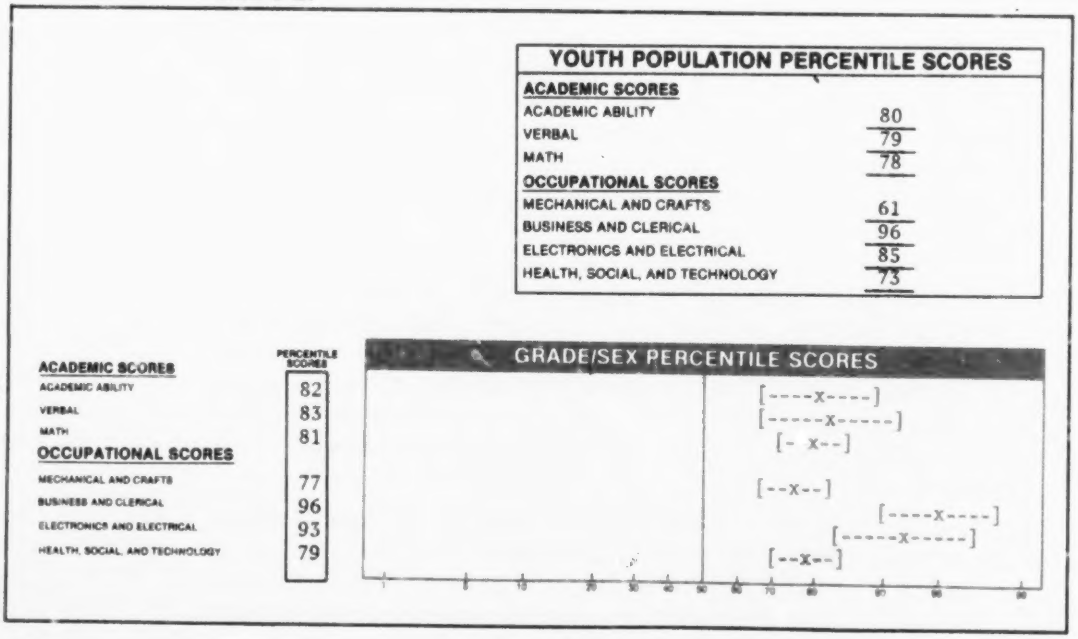
Case Studies

The case studies presented in this chapter demonstrate the interpretation of ASVAB results and the use of these results in career counseling. The cases were selected to illustrate the different career planning needs and heterogeneous ability levels of students who take the ASVAB. The cases provide counselors with examples of how to interpret ASVAB test results, but they are not models for how to do career counseling. As in all counseling scenarios, there are many options regarding what a counselor could do or say. These cases are illustrations, not "the answer" to a given situation. Other test data are included in these case studies, not as an endorsement, but merely to demonstrate the use of the ASVAB in conjunction with other tests commonly administered in schools for career counseling.

Case 1: Postsecondary Student, Christine

Christine is in her second year at a community college. She is thinking about changing schools but is hesitant because she does not really know what she wants to study or what career she would like to pursue.

The counselor at the college suggested Christine take the ASVAB and an interest inventory to determine some possible careers that she might want to explore. The results of her tests are pictured in Figures 5-1 and 5-2.



YOUTH POPULATION PERCENTILE SCORES	
ACADEMIC SCORES	
ACADEMIC ABILITY	80
VERBAL	79
MATH	78
OCCUPATIONAL SCORES	
MECHANICAL AND CRAFTS	61
BUSINESS AND CLERICAL	96
ELECTRONICS AND ELECTRICAL	85
HEALTH, SOCIAL, AND TECHNOLOGY	73

	PERCENTILE SCORES
ACADEMIC SCORES	
ACADEMIC ABILITY	82
VERBAL	83
MATH	81
OCCUPATIONAL SCORES	
MECHANICAL AND CRAFTS	77
BUSINESS AND CLERICAL	96
ELECTRONICS AND ELECTRICAL	93
HEALTH, SOCIAL, AND TECHNOLOGY	79

Figure 5-1. ASVAB student results for Christine.

General Occupational Themes

	Standard Score		Standard Score
Realistic	39	Social	40
Investigative	50	Enterprising	61
Artistic	52	Conventional	54

High Basic Interest Scales	Standard Score	3 Highest Occupational Scales	Standard Score
Law/Politics	69	Advertising Executive	59
Business Management	69	Lawyer	59
Sales	63	Army Officer	57

(Mean=50)

Figure 5-2. *Strong-Campbell Interest Inventory* results for Christine.

Counselor preparation: The counselor integrates Christine's ASVAB and *Strong-Campbell Interest Inventory* results. The counselor also tries to anticipate Christine's questions (e.g., "What major do you think I should select?").

Counselor to Christine: About a month ago you took the ASVAB and the *Strong-Campbell Interest Inventory.* The ASVAB measures your aptitudes or abilities. The *Strong-Campbell Interest Inventory* compares what you like to the interests of people in specific occupations and college majors. Here are your results sheets for both. Please take about 10 minutes to look at your scores and read everything on both sheets.

After 10 minutes: Let's discuss your ASVAB results first. The large graph compares your results to women in two-year colleges. There are seven composites on the ASVAB and their names appear to the left of the graph. Composite scores combine how you did on two or more parts of the ASVAB. This handout (give Handout III, "ASVAB Scores") shows which subtests and sample items make up each composite.

After 2 to 3 minutes: Do you understand what a composite is?

Christine to Counselor: Yes.

Counselor: Fine. The ASVAB scores are percentiles. Do you understand percentiles?

Christine: I think so. Doesn't an 80th percentile mean that I scored as well as or better than 80% of the students who took the ASVAB?

Counselor: That's right, but the large graph shows your results compared to women in an educational setting similar to yours. The other scores, labeled "Youth Population Percentile Scores," compare you to women and men. We will talk more about this other group of scores later. Remember as you read the results sheet that no test scores are exact. You should look at the band that shows where your "true score" probably lies.

The first 3 scores on your ASVAB are *academic composites.* These scores give an indication of your potential for further formal training. Your high level of ability in all the areas tested is very obvious. These composites include subtests in reading, math, and general science.

The next four scores are *occupational composites.* These composites measure your potential for successful performance in these general career areas. Again, compared to other women in two-year colleges, you are well above average in all areas. Your *Business & Clerical* score is the highest and your *Electronics & Electrical* score is also very high.

It might be helpful for you to compare your performance on the ASVAB to men in two-year colleges because in many of the electronics and electrical occupations, men would be your primary competitors (show column on *Counselor Summary* headed "Grade Opposite Sex"). Compared to men in two-year colleges, your percentile scores are

Mechanical & Crafts	*26*
Business & Clerical	*95*
Electronics & Electrical	*70*
Health, Social, & Technology	*49*

Remember that these scores are estimates and not exact numbers. You can see that you also scored well, compared to men, in the same two composites. *Business & Clerical* and *Electronics & Electrical.* Your score on *Mechanical & Crafts* is considerably lower compared to men due to your relative lack of familiarity with mechanical concepts and auto and shop information. Your high school transcript indicates that you never took any shop classes. This score, therefore, undoubtedly reflects the fact that you were unfamiliar with the vocabulary and principles of mechanics. It does not mean that you could not learn about mechanics.

This handout will give you a listing of occupations that relate to each *occupational composite* (give Handout VII, "Linking Your ASVAB Scores to Specific Occupations"). This may help you relate occupations to your aptitudes.

Now look at the column on your results sheet headed "Youth Population Percentile Scores," which compares your results to a sample of 18-to 23-year-old women and men. These scores are useful if you are interested in exploring the military as an option. Do you have any interest in finding out more about opportunities in the military?

Christine: No, I don't think so.

Counselor: That's fine, but if you wanted to see what the military services had to offer you, it would be easy using our computer system in the career center. There are civilian and military occupations in our system, including about 75 officer occupations for which you might qualify after graduation from a four-year college.

Now let's look at the *Strong-Campbell Interest Inventory.* The inventory does not measure your abilities; it is concerned only with your interest. Research has shown that occupations can be grouped into six general themes: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. Although these divisions are rough, they do provide useful guidelines.

The interest inventory shows that you are Enterprising and somewhat Conventional. Enterprising people make good entrepreneurs. They are persuasive and tend to have strong political interest. Conventional people are methodical, clerical, and organized. The test indicates some general career fields to which your interests relate (e.g., Law/Politics, Business Management, and Sales), as well as some specific occupations where your interest patterns match those of people in the occupations (e.g., Advertising Executive, Lawyer, and Army Officer). Remember, we are talking about your interests, things you might like, not your abilities.

Your interest inventory matched your interests with those of people with at least a four-year undergraduate degree. Have you thought about any specific schools you may want to attend next year?

Christine: Not really, although I'm sure it would have to be one of our state universities because of expense.

Counselor: Well, deciding on a career and a related area of study is difficult. Your aptitude test and interest inventory scores indicate that many options are open to you. Therefore, making a decision becomes even more difficult. Let's begin by selecting several occupations that most interest you at this time. Then, I suggest that you spend some time exploring these occupations by using the computer in the career center, as well as the other resources there. The computer can provide you with information about other factors to consider when deciding on a career (e.g., working conditions, employment outlook, and potential earnings). After you've gathered some information on those areas you like most, make an appointment to see me and we'll go through the information together.

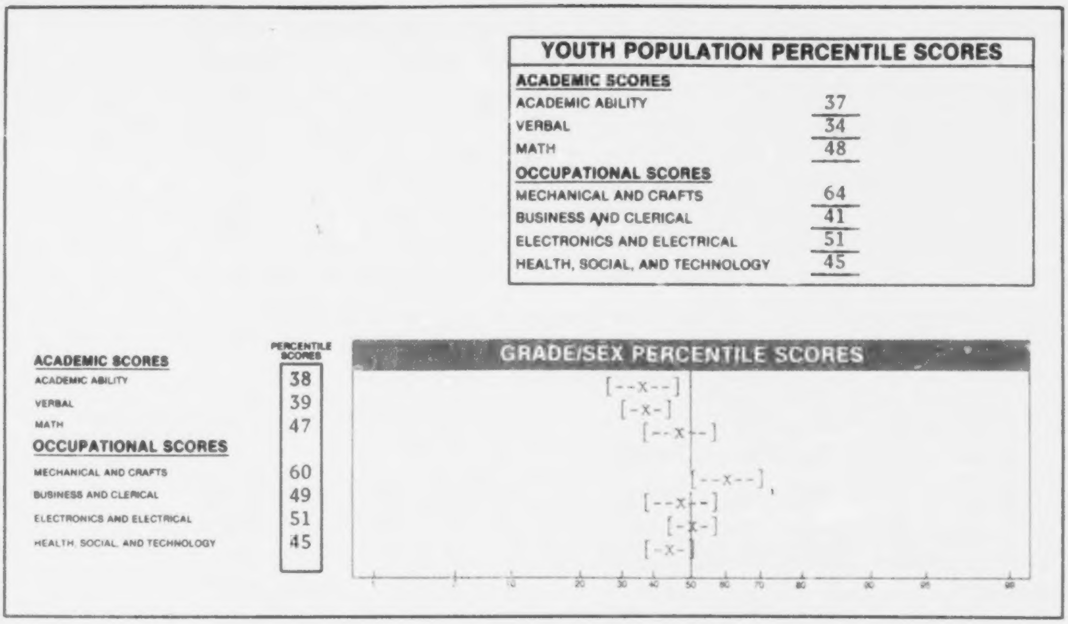
Case 2: Twelfth Grader, Doug

Doug attends a small high school in the suburbs of a metropolitan area. He has never expended much effort in academics, but has always passed his classes. He prefers shop classes and spends much of his free time working on cars. Doug's father is a maintenance engineer for a local medical manufacturing company. His mother is a secretary for a trucking company. Doug does not want to go to college. He is considering attending a trade school after graduation.

Doug wanted his counselor to help him to determine which occupations he should investigate and to explain what type of training is necessary to enter these occupations. Doug was willing to take tests to help find some answers. Doug's ASVAB results are presented in Figure 5-3.

Counselor preparation: The counselor reviews Doug's ASVAB results and student file prior to his appointment. The counselor pays particular attention to grades on vocational preparation courses and notes from previous counseling sessions. The counselor also attempts to formulate clear links between Doug's ASVAB results and training opportunities.

Counselor to Doug: About a month ago you took the ASVAB. The ASVAB measures your abilities in several different areas. The scores on the ASVAB will show you whether or not you are better in a specific academic or career area. The ASVAB measures abilities you've developed and not the area or occupations that interest you. Take about 10 minutes



YOUTH POPULATION PERCENTILE SCORES	
ACADEMIC SCORES	
ACADEMIC ABILITY	37
VERBAL	34
MATH	48
OCCUPATIONAL SCORES	
MECHANICAL AND CRAFTS	64
BUSINESS AND CLERICAL	41
ELECTRONICS AND ELECTRICAL	51
HEALTH, SOCIAL, AND TECHNOLOGY	45

	PERCENTILE SCORES
ACADEMIC SCORES	
ACADEMIC ABILITY	38
VERBAL	39
MATH	47
OCCUPATIONAL SCORES	
MECHANICAL AND CRAFTS	60
BUSINESS AND CLERICAL	49
ELECTRONICS AND ELECTRICAL	51
HEALTH, SOCIAL, AND TECHNOLOGY	45

Figure 5-3. ASVAB student results for Doug.

to look at your ASVAB scores and read the front and back of your results sheet.

After 5 minutes: Your ASVAB results are reported in percentile scores. For example, your percentile score of 60 on the *Mechanical & Crafts* composite shows that you scored as well as or better than 60 out of every 100 male students in the 12th grade nationwide who took the test. Do you understand?

Doug to Counselor: My scores only compare me to other guys who took the test?

Counselor: Yes. The scores on the large graph on your results sheet compare you with 12th-grade men. My *Counselor Summary* includes results that compare you to 12th-grade women and to all 12th graders. I will be glad to share those results with you later if you would like to see them. You also have another set of scores, labeled "Youth Population Percentile Scores," on your results sheet that compares your scores to the scores of a sample of 18-to 23-year-old women and men who took the ASVAB. We will talk more about these scores later.

Looking at the large graph, labeled "Grade/Sex Percentile Scores," you can see that seven composite scores are listed to the left of the graph. Composite scores combine how you did on two or more parts of the ASVAB. Take a minute to look at this handout (give Handout III, "ASVAB Scores") which shows each of the subtests and some sample items that make up each composite.

After 2-3 minutes: Do you understand what a composite is?

Doug: Yes.

Counselor: Good. Do you have any questions so far?

Doug: I never even heard some of the words on the electronics part.

Counselor: That's probably because you have not studied electricity or electronics. Therefore, you might have scored a little lower on *Electronics & Electrical* than *Mechanical & Crafts*. The ASVAB measures what you have learned so far in school and in your experiences outside of school. If you took a shop class like "Electricity," for instance, and then retook the ASVAB, your scores would probably improve. Keep in mind, as we look at each of your scores, that they tell how much ability and knowledge you demonstrated when you took the test.

When you look at your results, use the bands around each score. As the written explanation states, test scores cannot be perfectly exact. For example, if you took the ASVAB again, your *Math* score would probably not be exactly the 47th percentile but it would probably be somewhere between the 35th and 55th percentiles, as the band indicates.

Let's look at your scores shown in the large graph. The first 3 scores are called *academic composites*. These scores give an indication of your potential for further formal education like college, technical school, or military training programs. Your scores are very similar on all of these composites. That is why the bands overlap. It appears that you can answer questions that require mathematical abilities almost as well as those that require vocabulary and reading. Are your interests about the same in both areas?

Doug: I don't read much. I guess I like math a little better.

Counselor: Well, you seem to have at least average ability in both areas. What you like is important, however.

The next four scores show how well you performed on the *occupational composites*. These composites measure your potential for performance in these general career areas. You scored highest on the *Mechanical & Crafts* composite; however, it is important to note that actually all four *occupational composites* have overlapping bands. Therefore, this test doesn't sufficiently differentiate between your aptitudes in the four areas measured by the ASVAB. We will want to look at all the other data we have in addition to the ASVAB to help you select careers to explore.

I want you to look at those other scores, for a minute, in the box labeled "Youth Population Percentile Scores." As I said before, those scores compare your performance to a sample of 18- to 23-year-old women and men. These scores are helpful if you want to explore occupational and training opportunities available in the military. Do you have any interest in the military?

Doug: No.

Counselor: That's fine. Let's look at this handout (Handout VII) to relate your occupational scores to some specific occupational areas. Do you see anything that looks interesting?

Doug: I might like being an electrician. I wouldn't want to be a line installer—isn't that one of those guys who climbs telephone poles?

Counselor: You're right. Are you saying that where you work is important to you?

Doug: Yes. I don't think I want to work outside like guys do on construction sites. Being an auto mechanic might be okay, too, for a while. I like to work on my own car and I've worked at a gas station, but I don't want to be an auto mechanic the rest of my life.

Counselor: There are many other similar occupations that require mechanical aptitude and similar skills to those shown on this handout (Handout VII) under *Electronics & Electrical*. We have several trade schools in this area with training in mechanical and electrical occupations. Our career center has information about them. Do you know anything about any of the trade schools or community colleges in the area?

Doug: No. I've only lived here for a year.

Counselor: Well, let's talk about your interests and ambitions a bit more and then I will be in a better position to suggest occupations and training programs for you to explore. You've talked quite a bit about occupations that require you to work with things and you also mentioned not wanting to be an auto mechanic the rest of your life. (Pause.)

Doug: Yes.

Counselor: Well, earlier I noticed that you have an average score on the *Math* composite even though you haven't taken a math class in 2 years. I was wondering if you'd like a job where you worked with numbers, for example, a computer operator or programmer?

Doug: Maybe. Do you need to go to college for those jobs?

Counselor: You do not need 4 years of college to be an operator or programmer; however, many persons in programming jobs do eventually earn degrees.

We've talked about several occupations that may be appropriate for your interests and abilities, but there are many more that we may have overlooked. That's why we have a computer in the career center—to help students check out a range of careers related to their interests and abilities. It's simple to use the computer to search for careers and I think it might identify some additional occupations for you to consider. Would you like to use it?

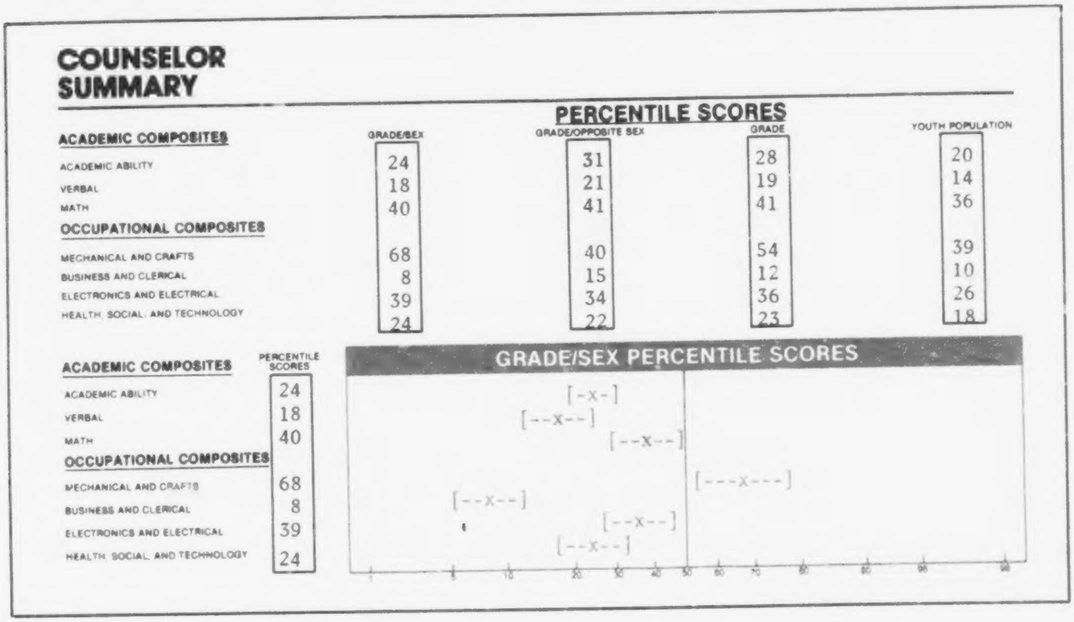
Doug: Sure. How does it work?

Counselor: First, you will begin with a student handbook which asks you questions like, "Are you interested in going to a two-year program after high school to learn a skill?" The handbook is pretty simple, but it takes about 30 or 40 minutes to complete. Why don't you fill it out this afternoon or tomorrow and then stop back to see me on Thursday. I could meet you in the career center at the beginning of your Study Hall to go over the handbook and explain a few basic steps on how to use the computer. Then you can use the computer to do a career search. It probably will take you about 20 to 30 minutes and we'll discuss those occupations it suggests next week.

Doug: Okay. I'll see you later.

Case 3: Eleventh Grader, Marsha

Marsha, a high school junior, mentioned to her counselor that she wanted to discuss her options after high school. The counselor arranged for an interview. During this interview, Marsha indicated that she doubted her ability to obtain a college degree. She told the counselor that she did not want to work in a factory like her mother, but might want to join the Army like her older sister. Marsha said she liked sports, especially softball, and enjoyed designing jewelry. Her counselor suggested Marsha take the ASVAB to obtain a clearer picture of her aptitudes and to determine some possible career areas that Marsha might want to explore. Marsha's test results are presented in Figure 5-4.



COUNSELOR SUMMARY

	PERCENTILE SCORES			
	GRADE/SEX	GRADE/OPPOSITE SEX	GRADE	YOUTH POPULATION
ACADEMIC COMPOSITES				
ACADEMIC ABILITY	24	31	28	20
VERBAL	18	21	19	14
MATH	40	41	41	36
OCCUPATIONAL COMPOSITES				
MECHANICAL AND CRAFTS	68	40	54	39
BUSINESS AND CLERICAL	8	15	12	10
ELECTRONICS AND ELECTRICAL	39	34	36	26
HEALTH, SOCIAL, AND TECHNOLOGY	24	22	23	18

	PERCENTILE SCORES
ACADEMIC COMPOSITES	
ACADEMIC ABILITY	24
VERBAL	18
MATH	40
OCCUPATIONAL COMPOSITES	
MECHANICAL AND CRAFTS	68
BUSINESS AND CLERICAL	8
ELECTRONICS AND ELECTRICAL	39
HEALTH, SOCIAL, AND TECHNOLOGY	24

Figure 5-4. *Counselor Summary* for Marsha.

Counselor preparation: The counselor reviews Marsha's ASVAB results and student file prior to her appointment. The counselor determines what questions Marsha most likely will ask and prepares responses. The counselor studies Marsha's scores and related information and prepares a list of career areas that Marsha might want to consider.

Counselor to Marsha: Remember that the ASVAB is an aptitude test. It is designed to measure your abilities in certain general career areas.

The ASVAB is just one tool that can help you decide what career is best for you. We also want to keep in mind other factors like your interests.

Let's spend about 10 or 15 minutes going over your ASVAB results. While I pull your permanent record, please look at your scores and read both sides of the results sheet.

After 5 minutes: Let's look at the graph of your ASVAB results. I have a copy here to look at that I'll put into your school file when we are finished. The graph shows how your scores compare to a sample of 11th-grade women across the United States who took the ASVAB.

The scores are reported in percentiles. Do you understand percentile scores?

Marsha to Counselor: I think so.

Counselor: Look at your *Mechanical & Crafts* score. You scored at the 68th percentile. That means that you scored as well as or better than 68% of 11th grade women. Remember as you read the results sheet that no test scores are exact. You should look at the band that shows where your "true score" lies. For example, you scored at the 68th percentile on *Mechanical & Crafts*. It is likely that your true score lies between the 53rd and 79th percentiles.

There are seven composite scores listed on the left of the graph. These composites come from the 10 individual subtests or parts of the ASVAB. Composite scores combine how you did on two or more parts of the ASVAB. For example, the first composite listed is *Academic Ability*. (Give student Handout III, "ASVAB Scores," and pause for student to look at subtest names and sample items.)

After 2-3 minutes: Do you understand what a composite is?

Marsha: Yes.

Counselor: Fine. The sheet I just gave you shows the subtests and some sample items that make up the composites. *Academic Ability* combines how you did on *Word Knowledge, Paragraph Comprehension,* and *Arithmetic Reasoning. Academic Ability* gives you a general indication of how you would perform in further formal education like a military training program or a technical school program after high school.

Now, looking back at your results sheet, the next two scores measure *Verbal* and *Math*. You can look at the handout I gave you for a minute to see which subtests and items are in the *Verbal* and *Math* composites. (Pause.)

Your *Academic Ability* composite score combines some of the same subtests from the *Verbal* and *Math* sections. This score is low, which suggests you would probably have a difficult time in college courses. Your highest *academic composite* is in *Math*, which is a little below average. (Average would be the 50th percentile.) The *math* composite measures your general understanding of math and your ability to use numbers to solve problems. Your *Verbal* composite score is lower. The *Verbal* composite shows how well you did on tests measuring vocabulary, reading skills, and knowledge of information taught in science courses. Do you have any questions about your *Academic Ability, Verbal*, or *Math* scores?

Marsha: Not right now.

Counselor: Let's go on and look at the next four scores, which are *occupational composite* scores. Take a few minutes to look at the subtests and items that make up each of these four composites. (Pause). *Occupational composites* measure your potential in general career areas. For example, you scored higher than most 11th-grade women on the *Mechanical & Crafts* composite, which is an estimate of how well you could perform in this career area. Your lowest *occupational composite* was ***Business & Clerical***, which provides an estimate of performance in the business and clerical career area. One of the abilities that the ***Business & Clerical*** composite measures is *Coding Speed. Coding Speed* is determined by how quickly and accurately you can use a key to match words with a four-digit code. There are also verbal skills in this composite.

You can see that your highest score is on *Mechanical & Crafts*. Its band does not overlap any other composite. Because you scored above average compared to other 11th-grade women, you may want to consider exploring occupations in this area (e.g., jet engine mechanic). Mechanical and crafts occupations, however, currently are predominately filled by men. In order to get an idea of how you scored compared to men who took the test, we should determine your score compared to those of 11th-grade men. The *Counselor Summary* of your scores that I have shows how you compare to 11th-grade men (show column marked "Grade/Opposite Sex"). Your score on the *Mechanical & Crafts* composite is at the 40th percentile, which is lower than the score you got when you were being compared to women. This is not surprising, since more 11th-grade men than women have been exposed to information in this area. If you have an interest in occupations in this area, however, you can take some courses and gain knowledge in these fields. We will talk more about mechanical and crafts occupations in a few minutes.

Your second highest *occupational composite* is *Electronics & Electrical*; although your true score may not be higher than *Health, Social, & Technology* because the bands overlap. You also may wish to explore occupations in the both of these areas. Do you have any questions about your *occupational composite* scores? (Pause.)

Marsha: No, I think I understand.'

Counselor: Okay, if you think of anything, please ask. Before I go on and talk about linking your ASVAB results to specific occupations, tell me, are you surprised by your results?

Marsha: Yes, a little. I didn't think I'd score so high on the mechanical part.

Counselor: Well, do you have a good feeling from doing better than you expected or are you uneasy because I said men typically score high on *Mechanical & Crafts*?

Marsha: I'm pleased I scored high but surprised.

Counselor: Fine, how about your scores on the *academic composites*?

Marsha: They didn't surprise me. They are about the same as my state competency test scores.

Counselor: Based on your grades and other standardized tests, your ASVAB results seem to confirm your particular strengths and abilities. The next big step is to help you select occupations you may want to explore. This will include finding out about further training or education you would need for specific occupations. We have information on both civilian and military information in our school's career center that you can use.

But before we do that, look at the scores in the column headed "Youth Population Percentile Scores" on your ASVAB results sheet. These scores compare your performance on the test to that of women and men aged 18-23. These scores are somewhat lower than your other scores because the people with whom you are being compared are older than you and this group includes both women and men. You can use these scores, however, with the *Military Career Guide* to estimate your chances of qualifying for training for military occupations.

Since you indicated you are thinking about joining the Army, like your sister did, you should look at the *Military Career Guide*. This book provides information about occupational and training opportunities in all branches of the military services. Here is a handout that may help you use this guide to explore military occupations (show Handout I, "Using the *Military Career Guide*"). I will show you where the guide is located and go through an example with you later when we go to the career center.

You may know from your sister being in the Army that, overall, 9% of persons in the military are women. In the past, women in the military traditionally worked in medical and administrative positions. Today, women can enlist in any occupational specialty for which they can qualify. Some combat specialties, however, are open only to men.

What type of occupations interest you?

Marsha: Well, I like to work with my hands. I am not sure I am strong enough though to do the types of jobs men usually do.

Counselor: That is a good point. You must be aware of the physical demands of an occupation but there may be mechanical-type jobs that do not require lifting heavy loads. You can find that out in the career center. If you find that the physical demands of mechanical occupations are beyond your capability, perhaps some of the occupations in the electronics and electrical area would interest you (e.g., repairing telephone or other communication systems equipment).

When it is time to prepare your schedule for next year, it will be helpful if you have a clearer idea about your plans after high school. We will probably pull your ASVAB results out of your file then and look at them again. Do you have any further questions about your ASVAB results?

Marsha: I did really badly in *Business & Clerical*, didn't I?

Counselor: That was your lowest composite. Remember, I said that *Coding Speed* is one of the abilities measured by the *Business & Clerical* composite. It is possible that your *Business & Clerical* score was so low because of the timed *Coding Speed* subtest. You may just be the type of person who does not like to rush through things. You were probably being very careful when taking that part of the test.

Marsha: Yes. I don't like to rush when I take a test.

Counselor: That is good to know. You might not want the type of job where someone will pressure you to work fast. We will keep that in mind when we talk about specific occupations you might want to explore.

Now, I'd like us to generate a tentative list of occupations for you to explore in the career center. How about any of the occupations I have mentioned or any others you have thought of as I talked?

Marsha: I would like to find out what a machinist does. I also like the sound of repairing telephones. I think I could do that.

Counselor: There are many occupations where workers repair different types of equipment. Perhaps you would also like to find out about people who are TV and audio video repairers.

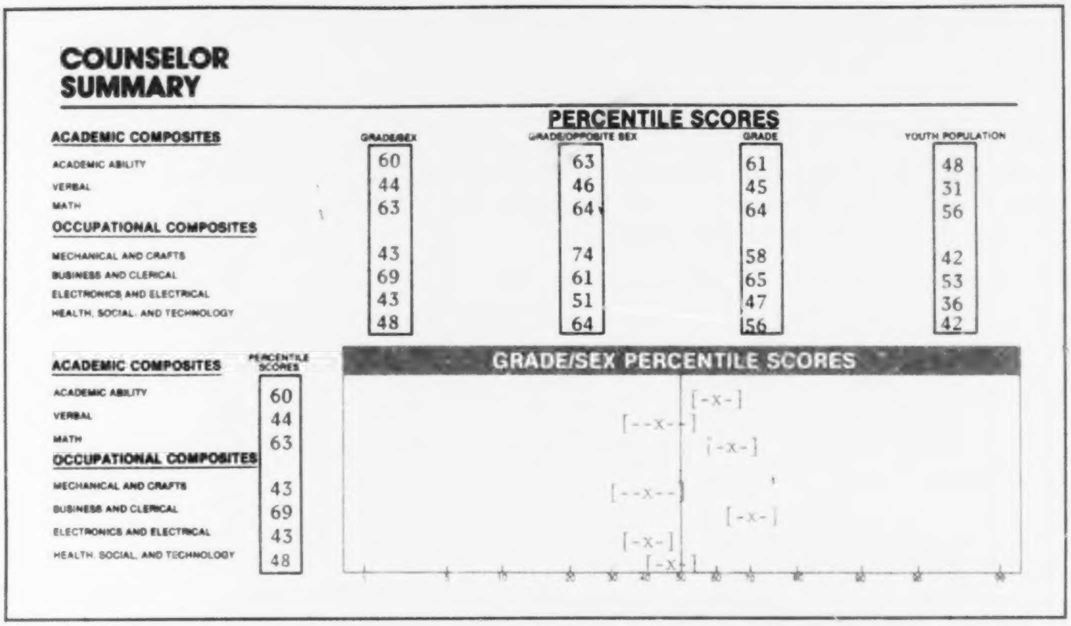
Marsha: Do they have all those occupations in the military?

Counselor: That's where the *Military Career Guide* will help you. It will tell you which service has specific occupations and again you can use your ASVAB results to determine if you are likely to qualify for training in occupations that interest you. Let's go down to the career center now and I will help you get started exploring the occupations we just mentioned.

Case 4: Tenth Grader, James

James, 16 lives in a large city with his parents and two sisters. Several of his close relatives are in the military. James has an uncle who has been in the Navy for 15 years and an older brother who is on his first tour of duty in the Marines. His mother works part-time as a nurse; his father is employed in a factory doing assembly work. James thinks he would like to go into the military after high school.

The counselor suggested that James take the ASVAB and the *Self-Directed Search* to improve his self-understanding in order to give direction to his career exploration. James's test results are presented in Figures 5-5 and 5-6.



COUNSELOR SUMMARY

PERCENTILE SCORES

ACADEMIC COMPOSITES	GRADE/SEX	GRADE/OPPOSITE SEX	GRADE	YOUTH POPULATION
ACADEMIC ABILITY	60	63	61	48
VERBAL	44	46	45	31
MATH	63	64	64	56
OCCUPATIONAL COMPOSITES				
MECHANICAL AND CRAFTS	43	74	58	42
BUSINESS AND CLERICAL	69	61	65	53
ELECTRONICS AND ELECTRICAL	43	51	47	36
HEALTH, SOCIAL, AND TECHNOLOGY	48	64	56	42

ACADEMIC COMPOSITES	PERCENTILE SCORES
ACADEMIC ABILITY	60
VERBAL	44
MATH	63
OCCUPATIONAL COMPOSITES	
MECHANICAL AND CRAFTS	43
BUSINESS AND CLERICAL	69
ELECTRONICS AND ELECTRICAL	43
HEALTH, SOCIAL, AND TECHNOLOGY	48

Figure 5-5. *Counselor Summary* for James.

Summary Code CRE		Similar Codes CER, RCE, REC, ERC	
Occupation	**Education**		
CODE: CRE		CODE: CER	
Electric-Motor Assembler	3	Data Processing Worker	4
Sewing-Machine Operator	3	Mail Clerk	4
CODE: RCE		CODE: REC	
Truck Driver, Light	3	Supervisor, Natural-Gas Plant	4
Crane Operator	3		
Fork-Lift Truck Operator	2		
Lumber Inspector	3	CODE: ERC	
Tractor Operator	3	Postmaster	4
Tractor-Trailer-Truck Driver	3		

Figure 5-6. *Self-Directed Search* results for James.

Counselor preparation: The counselor reviews James's test results and student file prior to his appointment. The counselor pays particular attention to notes from previous counseling sessions, previous grades, and any other relevant information. The counselor tries to anticipate questions James will ask (e.g., "What occupations are best for me?").

Counselor to James: I want to spend this half hour going over the results of the ASVAB and the *Self-Directed Search* with you and talking about occupations you might want to begin to explore. Remember as we talk that the ASVAB is an aptitude test; it measures your skills or abilities. The other inventory focuses on what you like to do, your interests.

Look at the graph on your ASVAB results sheet to see how you scored. Take about 10 minutes to look at your scores and read both sides of the results sheet.

After 5 minutes: The ASVAB has seven composite scores. The names of the composites are listed to the left of the graph on your results sheet. Composites are combinations of two or more parts of the ASVAB. This handout (give Handout III, "ASVAB Scores") shows the subtests and sample items that make up the scores in each of these areas.

After 2-3 minutes: Do you understand what a composite is?

James to Counselor: Yes.

Counselor: Good. Your ASVAB results are given in percentile scores. Do you understand what a percentile is?

James: I'm not sure. Is it the same as percent?

Counselor: Not exactly. A percentile of 69 for the *Business & Clerical* composite on the large graph would mean that you scored as well as or better than 69 out of every 100 male students in the 11th grade nationwide who took the test. That means that 31 students out of 100 scored higher than you. The actual score is marked by an "X" on the graph at 69. You can be reasonably sure, however, that your "true score" on each composite lies somewhere in the range of the band.

Your scores may improve if you retake the ASVAB as a junior or senior. The ASVAB measures how much you know and what abilities you have already acquired. If you learn more between now and some time in the future when you retake the test, your scores will probably improve.

Let's look at your scores. The first 3 composites measure academic skills. *Academic Ability* gives an indication of your potential for further formal education after high school like college, technical school, or military training programs. Look at the handout I gave you. As you can see, it shows that this score is based on specific reading and arithmetic skills. (Pause.) Your *Math* composite is a relative strength for you. This measures your general understanding of math and your ability to use numbers to solve problems. Your *Verbal* composite score is significantly lower. The reason I say the difference is significant is that the bands do not overlap. The *Verbal* composite shows how well you did on tests measuring vocabulary, reading skills, and knowledge of information taught in science courses.

The next four scores are *occupational composite* scores. Take a few minutes to look at what subtests and items make up these four composites. (Pause.) *Occupational composites* measure your potential for successful performance in these general career areas. You scored highest on the *Business & Clerical* composite. You scored lower in the other three career areas. This would suggest that you would do better in the business and clerical career area than in the other areas listed.

Look for a minute at the other scores on your sheet labeled "Youth Population Percentile Scores." These scores are to be used with the *Military Career Guide* to provide some estimate of the likelihood of your qualifying for at least one military specialty within each of the occupations in the book. Your scores may be low because you are only 16 and the Youth Population scores are based on women and men who were 18 to 23 years old when they took the ASVAB. The *Military Career Guide* is located in the career center. Here is a handout that will help you use this guide (give Handout I, "Using the *Military Career Guide*"). I know you are considering entering the military after high school. This book is a valuable resource for you. We will go over it in more detail before we are done here. You probably will want to check it out to take home to read.

Now let's look at your personality type compared to persons in several occupations. The *Self-Directed Search* shows that you are Conventional and to a lesser degree Realistic and Enterprising. Conventional people like to work with data and details. Conventional-type people tend to prefer to work with words and numbers, carrying out detailed instructions or following a prescribed plan. They often work in offices. Realistic people prefer to work on their own using their hands and tools to build, repair, grow, or make things, often outdoors. Enterprising people like to work with people and manage them in a business sense. Does some of what I've said sound like you?

James: Well, I don't mind working with numbers and I like my typing class. I didn't do that great in shop. I like to be with people but sometimes I do better if I work alone. I don't think I'd like to have to work outside a lot if there were such cold winters like we have around here.

Counselor: That's good to know. Your ASVAB results, the *Self-Directed Search*, and your interest in your typing class would suggest you might do well in a variety of occupations, for example, computer operator or postal clerk. When exploring career areas, you also have to consider physical demands and salary range. The career center has resources to help you to find out exactly what kinds of tasks people in each of these occupations actually perform and in what types of settings they typically work.

It also is important for you to begin to think about the type of further education and training you want to pursue after graduation from high school. The occupations on the *Self-Directed Search* summary sheet are three and four education levels. This means high school and some college, technical, or business training are needed.

James: Wouldn't the military give me the training I need for a job?

Counselor: Yes. The military has very good training and educational programs as do the community colleges and vocational schools in our area. The *Military Career Guide* I mentioned before is just one reference we have in our career center that will tell you about military training programs.

I hope you will spend some time in the career center exploring some occupations suggested by your ASVAB and the *Self-Directed Search*. It would be helpful for you to look at both military and civilian opportunities. The *Military Career Guide* gives civilian counterparts or occupational titles for the civilian world that you should also study. For example, you may want to look at occupations like telecommunications operator or payroll clerk. All branches of the military need many workers in these two occupations. There are people who work in the civilian world that do the same task and need the same skills although their jobs may be called by a different name.

I'd like to be sure you know how to use the resources available in the career center. After you read the handout I gave you about the *Military Career Guide*, check the book out of the career center. The aide will show you where it and other materials are located. Look at lots of materials (e.g., *Occupational Outlook Handbook*) and not just the *Military Career Guide*. I'd like to talk with you about what you find and any questions you may have after your search. I also encourage you to take both these results sheets home and talk with your parents. If they have any questions, tell them to give me a call. I have a copy of your results in your school file so we can refer to them later. Do you have any questions?

James: My uncle is an officer in the Navy. Do you think I could be an officer?

Counselor: You usually need a college degree to be an officer. Do you think you want to go to college?

James: No, at least not right after high school.

Counselor: You should think about that some more. I would encourage you this year to explore as many careers and types of further education as possible. Remember, if you qualify for the military, you could go in as an enlisted man and earn a college degree while in the service, and then apply to become an officer. You also could enter the military as an enlisted man and earn educational benefits that can be used after a tour of duty. I would like to meet with you again in 2 weeks after you have spent some time talking over your test results with your parents and explored several careers.

6

EXPLORING CAREERS: THE ASVAB WORKBOOK

Overview of Exploring Careers: The ASVAB Workbook

Exploring Careers: The ASVAB Workbook will help students understand how to use information about themselves — their preferences and their abilities — in career exploration. It can help students:

- interpret their ASVAB scores and use them in career decision making;
- examine their values, interests, skills, abilities, and educational goals;
- identify occupations that have the features they want; and
- learn about career decision making.

The workbook uses cartoon characters to introduce key career decision-making concepts. The story line involves four high school students who find the workbook exercises a catalyst for exploring their career plans. By completing these exercises, the students gain a better understanding of themselves and what will be important to them in an occupation.

Although the workbook was designed primarily for students in grades 11 and 12, students in grade 10 and in community or junior colleges (grades 13 and 14) will also find it helpful for career exploration.

Exploring Careers: The ASVAB Workbook contains the following sections:

- Which Career for You?
  - —Learning How to Use the Workbook
  - —Thinking about Your Future
- Values: What Do You Want?
- Interests and Skills: Activities You Like and Do Well
- What You Feel You Must Avoid
- Education: How Much? What Kind?
- Preparing a Summary Sheet
- ASVAB Scores: What Do They Mean?
  - —Interpreting ASVAB Scores
  - —Things to Remember about ASVAB Scores
  - —Using ASVAB Scores for Military Career Exploration
- OCCU-FIND: A Chart for Finding Occupations
- HITS AND MISSES: Is An Occupation Right for You?
- Other Occupations: What's Not on OCCU-FIND?
- Making Plans: What Happens Next?
  - —Next Steps: Things to Do Later
  - —Working with OCCU-FIND
  - —Making More HITS AND MISSES STRIPS
  - —Learning More about Occupations
  - —DECIDING SQUARES: Making a Choice

Take a few minutes now to read *Exploring Careers: The ASVAB Workbook* so you will be familiar with the contents as you read the rest of this chapter.

Philosophical and Technical Background

The following is a brief summary that provides background on the philosophical underpinnings of the ASVAB workbook and technical information about the development of the workbook.

The Development of Exploring Careers: The ASVAB Workbook

Format of the Workbook

The development of *Exploring Careers: The ASVAB Workbook* was based on the belief that it should provide the best possible career guidance material in a format that would engage students. The plan was to (1) create a core of material that could be completed by students in a relatively short period of time, such as one school period; (2) provide a simple, but valid, career exploration and decision-making process; and (3) introduce a wide range of civilian and military occupations for student consideration.

A format was designed to engage students' interest. Four cartoon characters were developed to represent different types of students. Gloria is an academically talented, college-bound student. Mark enjoys mechanical activities and is considering the military. Cindy is interested in the arts and has unrealistic expectations. Jonathan wants to avoid further academic pursuits and prefers to avoid thinking about his future career. The students discuss the concepts introduced in the workbook and ask the types of questions students might ask. They develop maturity in career awareness as the workbook progresses. Each major workbook concept is introduced and explored by the cartoon characters. In this way, the cartoon characters model information-seeking and career-exploration skills.

The cartoons were tested with school groups. Alternative art work and dialogues were developed. These were tried out with several focus groups of high school age students during the development process. The students' comments and reactions to the materials were used to guide the cartoon style and dialogue used.

The workbook includes several interactive activities that engage the students. In addition to self-assessment exercises, latent image printing was used to create a chart that would show students which occupations meet their needs and provide what they want. Named OCCU-FIND, the chart enables students to link their most important values, interests, etc., with occupations that provide more than the average number of these features. OCCU-FIND also enables students to identify features of an occupation beyond those features they have selected. In addition, it shows the military occupations related to the civilian occupations that are included, the ASVAB occupational scores that best predict selection into these military occupations, and an indication of the likelihood of being accepted into military training for one of the specialties in these occupations.

Selection of Occupations

The decision was made to use occupational information that had been developed for SIGI and SIGIPLUS, computer-based guidance systems.* This enables students to work through several self-assessment exercises and to use their self-assessment information to identify occupations to explore.

About 100 occupations were selected for inclusion in OCCU-FIND. The list of occupations was restricted to those for which data had been gathered for SIGIPLUS and that are described in some detail in the 1986-87 edition of the *Occupational Outlook Handbook* (OOH).

At least one, and more commonly four or more, occupations were selected from each OOH cluster. Wherever possible, civilian occupations with related military occupations were selected. The relationship was determined by using the *Military Occupations and Training Data* (Defense Manpower Data Center, 1987). Emphasis also was placed on selecting military occupations that appear in the *Military Career Guide*. Selections were checked to ensure that a wide variety of values, interests and skills, and educational levels would be represented. Thus, the occupations included in OCCU-FIND can be considered to be fairly representative of the civilian and military worlds of work.

The 50-50 SCORE for enlisted occupations was derived from the graphs in the *Military Career Guide*. (See page 4 of the *Guide* for an explanation of the graphs.) It is the score, shown on the graph for each occupation, at which 50 percent of the people with aptitude qualifications in the specified ASVAB occupational group qualify for one or more specialties.

The Model of Career Exploration

The major objective of the workbook model is to help students learn the process of career exploration.

The first function of the model is to help students narrow the staggering number of occupations to a comprehensive, but manageable, list of options worthy of further consideration. To accomplish this, the model requires a data base of occupations with ratings on all features relevant to the students' specifications so that occupations can be selected with reference to the students' self-assessment. With manageable lists of occupations in hand, students are ready to engage in career exploration activities designed to help them focus on occupations of greatest interest to them.

The second function of the model is to help students make distinctions between occupations and to make choices that offer the optimal combination of occupational desirability and possibility. It is recognized that

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*SIGI and SIGIPLUS are programs developed and owned by Educational Testing Service.

there are two sides to each choice: what each student hopes to get from an occupation and what the occupation requires for entry and for success.

The perceptions of the importance and magnitude of various rewards, satisfactions, risks, and investments vary from one person to another. That is why the workbook begins with individual assessment. Three domains that have figured prominently in assessment for career decision making are

- Values;
- Interests; and
- A set of characteristics that have been called such things as aptitudes, abilities, skills, and knowledge.

These three domains are relatively independent in high school juniors and seniors (Katz, Norris, & Halpern, 1970; Norris & Katz, 1970).

Values and interests represent different sources of satisfaction (Katz, 1963, 1969). Research has demonstrated that, although interests are often among the main satisfactions sought in occupations, they are not the sole concern. For many people, the rewards and satisfactions that come from high income, altruism, security, independence, and other value dimensions are often more important (Chapman, Katz, Norris, & Pears, 1977; Norris, Katz, & Chapman, 1978). Indeed, many people seek satisfaction of their main interests not in their chosen occupations, but in avocational activities, particularly those interests that require exceptional talent for occupational success (e.g., sports and the performing arts).

Information that influences the chance of success (such as selection ratios, keenness of competition, test scores, previous performance, and ratings by competent observers) helps keep decision making grounded in reality; it helps students deal with requirements and risks, but not with opportunities for rewards and satisfactions.

Thus, the model provides appropriate roles for values, interests and skills, or abilities. It helps students balance these three areas in their career decision making instead of focusing exclusively or disproportionately on any single domain.

Values. The values used in the ASVAB workbook have been tested extensively in SIGI. Students perceived the dimensions as independent; the weights given each value varied greatly across students; each value was regarded as important by a substantial number of students; and students rarely felt that values of importance to them had been omitted. These characteristics of the values were confirmed in paper-and-pencil tests and interviews with high school students (Tittle, 1981). Evidence of the stability of values over a period of seven to ten years has been found in several studies (e.g., Mortimer & Lorence, 1979; Lindsay & Knox, 1984).

Interests and Skills. The exercise dimensions in the ASVAB workbook have been defined to permit students to make simultaneous assessments of interests and skills. These assessments can then be lined, via the extensive data base of occupational information in SIGIPLUS, to occupations in which such interests and skills are important.

The basic structure of interests and skills used in SIGIPLUS is

I. *Working with People*

Training, instructing, advising, counseling, interviewing, persuading, negotiating, selling, assisting, protecting, providing physical care, coordinating work with others, supervising, directing, assessing

II. *Working with Hands or Equipment*

Operating machines or equipment, using tools, measuring, maintaining, inspecting, repairing, installing, setting up, constructing, drafting, drawing, designing equipment, developing systems

III. *Communicating*

Following written/oral instructions, explaining, answering questions, making presentations, writing, preparing reports, public speaking, broadcasting, entertaining

IV. *Organizing Information*

Keeping records, cataloging, gathering information, conducting research, making diagrams, analyzing, interpreting, evaluating, developing ideas

V. *Working with Mathematics*

Mathematical reasoning, calculating, computing, applying formulas, developing budgets, analyzing numerical data

VI. *Special Activities*

Attention to detail, quick thinking, memorizing, fine and performing arts, spatial visualization

The last category, Special Activities, includes the miscellany of activities that are important in some occupations but cannot be comfortably classified elsewhere. For the ASVAB workbook, this category was broken down into three parts: Work with Computers, Work in the Arts, and Attention to Detail. Work with Computers was added because computer use is involved in a number of the OCCU-FIND occupations. The other two special activities, derived from SIGIPLUS programs, were also frequently found in OCCU-FIND occupations.

Dislikes and disabilities. The *Must Avoid* features in the ASVAB workbook have been reduced from a somewhat longer list used in SIGIPLUS. Because of concern about premature exclusion of occupations, particularly when a dislike could be changed, only three occupational dislikes/disabilities are listed in this section of the ASVAB workbook. Students are instructed to select no more than one, and the instructions suggest that making no choice in this section and leaving one's options open is more desirable than naming a dislike.

Education and training. The relationships between education and training, on the one hand, and entry into occupations, on the other hand, are often complicated.

The scope of this workbook requires a fairly simplistic approach: How many years of education or training beyond high school are required, recommended, or commonly found at entry into any occupation? Students can determine what occupations would not be ruled out by the level of education they specify. Any occupation requiring as many or fewer years of education than the amount specified by the student can be considered. If some occupations the students would otherwise want to consider are ruled out because the students specify too low a level of education, they may want to change their plans to include additional education.

Occupational information: sources and analyses. The workbook ratings of occupations on various features were derived from the data bases in SIGI and SIGIPLUS. These data bases have been constructed and revised over a considerable number of years and have had annual updates.

The validity of the ratings derives from the procedures used to generate them. Since the procedures involve matters of judgment, care is taken that the judgments be as well informed as is possible. To ensure this, the procedures call for using only the most reliable and recent sources of information; sources must be checked against one internal review by senior staff and external review by several experts. These procedures have been developed over several years and are applied by information specialists according to systematic guidelines. Procedures for values ratings were initially developed for SIGI and are documented in *Occupational Information in SIGI* (Pears & Weber, 1980). Ratings are based on a variety of sources, such as Bureau of Labor Statistics publications (e.g., *Occupational Outlook Handbook, Occupational Outlook Quarterly, White Collar Salaries, Current Population Survey);* salary and research surveys (e.g., *University of Texas National Survey of Hospital and Medical School Salaries, Scheduled Salaries for Professional Personnel in Characteristics of Doctoral Scientists and Engineers in the U.S.);* writeups of work tasks (e.g., Chronicle Guidance Publications, literature from professional associations, descriptions of apprenticeship programs); and expert opinion (e.g., teachers, consultants at professional associations, workers). Procedures for skill ratings and interest fields are also based on writeups of work tasks, descriptions of educational programs, and expert opinion.

Field Test Information

In December 1985, the preliminary version of the ASVAB student workbook was field tested with 188 high school students in six different states. The sample for field testing was designed specifically to include adequate representation from minority groups, different high school programs, and different geographic areas (California, Georgia, Illinois, Massachusetts, New Jersey, and Texas). The workbook was used in large and small groups with counselors present and by individual students. All of the students had previously taken ASVAB. After completion of the workbook, each student completed a short questionnaire. The questionnaire covered students' reactions to and understanding of the workbook, their knowledge of key career decision-making concepts and information, and their motivation to obtain further career planning assistance from counselors. Several different versions of the questionnaire were used so that a wider variety of information could be obtained. Information on background (age, grade, race/ethnicity, sex, school program, etc.) was obtained from all students.

Characteristics of Sample (188 students)

Age:	16	24%
	17	57%
	18	17%
Grade:	11	55%
	12	45%
Curriculum:	College prep	53%
	Voc-tech	21%
	Other	26%
Race/Ethnicity:	White	45%
	Asian American	15%
	Black	9%
	Mexican American	8%
	Other Hispanics	18%
Sex:	Male	58%
	Female	42%

Field Testing Results

Career Decision Making

- Before using the workbook, about two-thirds of the students (68 percent) said they knew little or nothing about selecting an occupation. After completing the workbook, only 9 percent of the students said they still did not know how to choose and plan for an occupation.
- Of the students who initially reported that they knew little or nothing about how to select an occupation, approximately 57 percent reported that they had learned a few ideas about career decision making; approximately 31 percent reported that they now had a good idea about how to make career decisions.
- More than half (58 percent) of the students reported that the workbook made them think further about occupations, 17 percent reported that the workbook confirmed occupational choices they had already made, and 4 percent said using the workbook changed what they were planning to do.

Student/Counselor Interaction

- **Approximately 15 percent of the students indicated that they had discussed career plans with counselors prior to using the workbook. After completing the workbook, an additional 58 percent of the students said they now planned to talk with counselors.**
- Forty-one percent of the students who had not previously talked with counselors said that using the workbook gave them more reason to do so; 29 percent of the students who had talked or planned to talk with counselors also said that using the workbook gave them more reason to talk with a counselor. However, 7 percent of the students said that having used the workbook gave them less reason to see a counselor.

Student Reaction to the Workbook

- Eighty-eight percent indicated that they liked the workbook or that it was OK.
- Eighty-five percent said they would not change the workbook in any way to make it more useful.

Counselor Reaction to the Workbook

- Counselors were almost unanimous in expressing approval of the sections they presented to the students.
- Fourteen of seventeen counselors who participated in the field testing of the workbook observed favorable changes in students' attitudes toward career exploration during the workbook exercises.

In summary, field test results showed that using the ASVAB workbook increased most students' knowledge of career decision making. The workbook is a useful adjunct to, but not a substitute for, student/counselor interaction. Students liked the workbook; counselors approved of it, too. Further evaluations are scheduled after the introduction of the workbook.

Quick Tour of the Workbook

The next few pages contain an overview of *Exploring Careers: The ASVAB Workbook*. This overview describes the purpose of each workbook section, the exercises provided for students, and the counselor's role in helping students complete each section. Counselors should of course, review the entire workbook before using it with a group of students.

A separate section of this chapter (pages 93-97) provides supplementary workbook exercises that counselors or teachers can elect to use with students. These exercises also allow the counselor or teacher to make the ASVAB workbook the focus of a longer career exploration course.

Choose Your Path (page 5)

Purpose: To provide the counselor, or the student using the workbook independently, with the option of covering ASVAB score interpretation first or proceeding through the workbook sections in order.

Which Career for You? (pages 6-12)

Purpose: To introduce the concept of career choice; to introduce the workbook's format, including the use of the ASVAB marker; and to introduce the cartoon characters, four young people exploring careers and career decision making as they go through their own ASVAB workbooks.

Exercises: Students learn to use the ASVAB marker by selecting one of four sample occupations provided; students are asked to indicate whether they have any plans for their future; and they are asked to list at least three occupations they have considered entering.

Counselor's Role: The counselor should explain that the first exercise provides students with an opportunity to learn how to use the ASVAB marker. The counselor should ensure that students understand that they will need to use this marker later in another part of the workbook. Here and throughout the workbook, the counselor will want to encourage further exploration of the concepts that are being introduced. For example, counselors can help students learn the differences between a career, an occupation, and a job. It is useful to stress the importance of planning and to emphasize that taking control of one's life does not limit choices but, instead, expands choices. This is often a new concept for young people.

Values: What Do You Want? (pages 13-18), including the *Values* exercise (page 16)

Purpose: To introduce the concept of personal values as they relate to work; to help students identify their own values; to provide an opportunity for reconsideration of values.

Exercise: After reading a short cartoon about values, the students complete an exercise. This exercise lists nine work-related values and provides a short definition of each value. Students are asked to pick the three values that are most important to them. Then, they read a second cartoon challenging their original choices. This shows Cindy discovering that being rich and famous may also involve hard work and little time for leisure activities. It shows Jonathan discovering that being a leader may mean getting all of the blame, as well as all of the credit. After reading the cartoon, the students are asked if they want to change any of their previous value choices.

Counselor's Role: If there is time, ask a few students to share how they chose their values. Was the choice difficult or easy? How sure were the students about their choices? Have those values been "challenged" in the real world?

> *Example:* "You say that you care a lot about helping others — can you tell us about ways in which you've tried to do this?" If necessary, help students explore the difference between helping others in the family and helping others as a part of a job or occupation.

Example: "There can be prestige associated with being on a school team, editing the newspaper/yearbook, etc. — does that matter to you?"

Finally, encourage student understanding that there are other values, not on this list, that could affect selection of a job or occupation or career (such as family, national security, or religious convictions). In these discussions, as well as others, encourage students to be nonjudgmental regarding other students' values, interests, etc.

Interests and Skills: Activities You Like and Do Well (pages 19-25), including *Interests and Skills* exercise (page 23)

Purpose: To introduce two concepts: what a person enjoys doing and what a person is good at doing; to provide an opportunity for students to identify their own interests and skills; to provide an opportunity for students to reconsider the interests and skills they have selected in the exercise.

Exercise: After reading a cartoon that introduces the interests and skills concepts, students are provided with an exercise that lists eight types of activities, each with a few illustrative examples.

The students are asked to pick one, two, or three activities that they both enjoy doing and do well. After the students read the cartoon challenging their selections among interests and skills activities, they are asked if they wish to change their initial choices.

Counselor's Role: There are three areas of discussion that can be helpful.

- First, encourage students to differentiate between interests and skills and to understand that when they make a choice in the exercise; both must be present. Perhaps someone likes to sing but knows that he or she cannot carry a tune. Another person may be very good at writing papers for school but may not enjoy writing.
- Second, help students understand the role that experience plays in the development of interests and skills. Help them understand that you cannot tell if you would be good at or enjoy something you have never tried. This may be a good opportunity to point out how sex-role stereotypes sometimes keep students from trying things they would enjoy and be good at. For example, some girls may avoid doing any mechanical activity because they think it is "men's work" but discover, when they try it, that they like mechanical tasks.
- Third, if you have time, ask students to share their choices and provide, as a "reality test," examples of how they know they are good at the activities they selected. Additionally, you might ask students if they think people can be happy doing work they do not find interesting. You might also ask, "Which mismatch has worse results, high interest/low skill or low interest/high skill?"

What You Feel You Must Avoid (pages 27-31), including the *Things You Must Avoid* exercise (page 28)

Purpose: To acknowledge that some people wish to avoid or cannot do certain activities in a job, occupation, or career; to let students rule out any one of three types of activities that they personally dislike or cannot do; to make students aware that ruling out occupations on the basis of dislikes may limit their opportunities.

Exercise: Students are provided with a list of three activities (public speaking, sitting in one place most of the time, heavy physical labor) and may pick one that they would like to avoid. The related cartoon suggests that students consider whether their dislikes might eliminate occupational options that are otherwise attractive.

Counselor's Role: Point out that students can skip this exercise; they are not required to avoid any of these activities; and, if possible, it is better for them to keep their options open and not rule out any occupations on the basis of what they think they dislike doing. If some students have a strong dislike or a disability that motivates them to avoid certain activities, you might want to discuss how dislikes/disabilities can be overcome or how people compensate for them.

Education: How Much? What Kind? (pages 33-39) including the *Education and Training* exercise (page 36)

Purpose: To make students aware that employers typically have educational requirements for hiring people into occupations; to provide students with an opportunity to specify the amount of education they want or are willing to obtain after high school; to give students an opportunity to reconsider their projected postsecondary school education/training decisions.

Exercise: After reading a cartoon about postsecondary school education and training, students are asked to choose one of four options, ranging from 0-1 year more education/training up to graduate or professional education. After a cartoon challenging their decisions about education, students are given the opportunity to change their estimates about the amount of postsecondary school education they plan to pursue.

Counselor's Role: Many young people make their postsecondary school educational plans based only on how well they are doing in high school. While high school grades can be a good indicator of academic ability, you may also want to urge students to consider their motivation. Students may study harder and do better in programs of study that lead to careers they want to enter than they would in areas of less interest to them. Stress that there are many opportunities for financial aid for college and that many kinds of educational/training opportunities exist. Direct them to up-to-date information on scholarships and loans and on educational and training opportunities, if appropriate. Discuss the ways that the military can help pay for their education. For example, military service members can take college courses while in the service, as well as obtain educational benefits that will enable them to attend college after they leave the service.

Preparing a Summary Sheet (pages 41-42)

Purpose: To summarize what students have learned about their values, interests and skills, educational aspirations, and dislikes. The purpose of this summary is to facilitate later work on two important workbook activities, using the OCCU-FIND chart and making HITS AND MISSES STRIPS.

Exercise: Students read a list of the values, interests and skills, and other features they have considered in the exercises, placing a plus sign (+) beside each they have chosen.

Counselor's Role: It is important to check that students transfer the information correctly from the exercises to the Summary Sheet.

ASVAB Scores: What Do They Mean? (pages 43-52), including *Interpreting ASVAB Scores* (pages 47-48) and *Using ASVAB Scores for Military Career Exploration* (page 49).

Purpose: To help students understand their ASVAB results sheet; to relate ASVAB scores to military careers; to help students understand the 50-50 SCORES.

Exercise: There are no specific exercises for students to complete in this part of the workbook.

Counselor's Role: Before the students proceed, distribute copies of *Your ASVAB Results*, if this has not yet been done. Students should be instructed to read the *ASVAB Scores: What Do They Mean?* cartoon and the sections entitled *Interpreting ASVAB Scores* and *Things To Remember About ASVAB Scores.*

You should then review score interpretation with students. (See Chapter 4 of the *ASVAB-14 Counselor's Manual* for detailed information about ASVAB test results and Chapter 5 for suggestions about interpreting ASVAB scores.) Point out the section of the score report that compares the student with other individuals of the same grade and sex (*Grade/Sex Percentile Scores*). Tell the students that the numbers in this section of the report show how well they did compared to other students like themselves. To make the explanation concrete, use specific examples. For example, "Let's say that Tom came out in the 40th percentile in Business and Clerical for boys in grade 11. That means he did as well as or better on this part of the test than 40 out of every 100 eleventh grade boys. Suppose that Mary came out in the 55th percentile in Mechanical and Crafts. What does that mean?" Be sure the students understand that percentile scores compare them with other students of the same sex and grade and that these scores are *not* the percentage of items they got right on each part of the test.

Next, point out the graph representing the *Grade/Sex Percentile Scores.* Explain that, because no test score is exact, this graph shows the reported percentile score with an X and a band (made up of dashes) that covers the area where the "true score" may be located. Tell the students to look at the bands for the seven scores (*Academic Ability*; *Verbal*; *Math*; *Mechan-*

ical and Crafts; Business and Clerical; *Electronics and Electrical*; and *Health, Social, and Technology*) to see whether or not the bands overlap. Explain that, if the bands overlap, the differences between the scores are not important. However, if the bands do not overlap, the score differences should be considered important. Use examples again. For example, "Let's say that Phyllis has a *Grade/Sex Percentile Score* of 48 for *Verbal* and 62 for *Math*. The bands for these two scores overlap on the graph. This means that there is no important difference between how Phyllis scored on these two academic scores. Let's say that Bill has a *Grade/Sex Percentile Score* of 88 on *Mechanics and Crafts* and a percentile score of 63 on *Electronics and Electrical*. The bands for these two scores do not overlap. What does this mean?" Be sure students understand that when the bands for the scores do not overlap, there is a significant difference between the scores. Thus, if Bill's score of 88 on *Mechanical and Crafts* is his highest score and if it doesn't overlap with any of the other occupational scores, he might want to see if he is interested in occupations for which *Mechanical and Crafts* skills are needed, e.g., heating and cooling mechanic, boat operator, welder, clothing and fabric repairer.

Next, differentiate between the three academic scores (*Academic Ability*; *Verbal*; *Math*), which estimate the students' potential for further education, and the four occupational scores (*Mechanical and Crafts*; *Business and Clerical*; *Electronics and Electrical*; and *Health, Social, and Technology*), which estimate their potential for successful performance in these career areas.

Ask students to identify the two occupational areas in which they have the highest percentile scores for their grade and sex. Then, ask them whether or not the bands for any scores overlap. They should understand the idea that if the highest score overlaps with the second highest and the second highest overlaps with the third, the highest and the third highest can be significantly different if they do not overlap. Students should finish this portion of the score interpretation with an understanding of their highest occupational scores, in comparison with other students of the same grade and sex, and an understanding of whether or not these scores differ importantly from one another.

Next, have students look at the section of the score report that presents the *Youth Population Percentile Scores*. These scores are contained in the rectangle at the top of the form. Explain that, because the *Youth Population Percentile Scores* compare them to all young adults ages 18 to 23, their percentile scores on this portion of the report are likely to be lower than when they were being compared to students in the same grade. Tell the students that in using *Exploring Careers: The ASVAB Workbook* they will use the *Youth Population Percentile Scores* for the four occupational scores. Stress that these scores reflect what a person has learned to date, not the person's ability to learn.

Answer any questions students may have about their ASVAB scores before proceeding to the next workbook section, *Using Your ASVAB Scores for Military Career Explorations*. Ask students to read this section, and then reiterate what is meant by a 50-50 SCORE. Explain that they will have they will have the opportunity later in the workbook to explore their chances of qualifying for occupational areas in the military. The 50-50 SCORE is the score level at which a student has a 50 percent chance of being accepted into one or more military occupational specialties. Be sure that students do not overinterpret this score and think that they will qualify for all of the specialties in these occupations in all of the branches of military service.

Note: If students started the workbook with *ASVAB Scores: What Do They Mean?*, this is the point where they return to the beginning of the workbook (page 6) and do the initial exercises about values, interests and skills, things to avoid, and education.

OCCU-FIND: A Chart for Finding Occupations (pages 53-58), including *Using OCCU-FIND* (pages 57-58)

Purpose: To introduce students to the OCCU-FIND chart; to help students select from over 100 occupations those meeting their values, interests and skills, and educational aspirations while not involving things they wish to avoid. The chart also shows military occupations that are related to many of the listed civilian occupations. Note that the chart is printed on both sides of the page.

Exercise: After reading a cartoon that introduces OCCU-FIND, the students use their Summary Sheets, prepared earlier, and begin working with the chart itself. This is also where students use their special ASVAB markers.

Step 1: Marking Horizontally. After consulting their Summary Sheets to remind them of their choices, students put their markers at the left side of the page beside the name of a feature they chose (e.g., a value such as High Income) and draw a horizontal line across the page. They continue the line around the back of the chart to the second half on the reverse side. The marker, called a "latent image developer," makes a pale yellow line and causes previously invisible stars to appear under the names of the occupations that are listed at the top of the page. A star indicates that the occupation provides the feature selected. For example, stars appear on the line beside the value "High Income" for occupations that provide a higher than average income [see Figure 6-1]. Students draw a line across the page for each feature on their Summary Sheet. The highest number of features a student may mark is eight (three values, three interests and skills, one for education, and one for something to avoid). The lowest number of features is five (three values, one interest and skill, and one for education).

Step 2: Marking Vertically. After students have drawn lines horizontally on the front and back of the chart for all the features they selected, you can help them find occupations that provide much or all of what they have specified on their Summary Sheets. Ask students to look at the stars that have appeared on their OCCU-FIND chart and locate one occupation that has stars on all or almost all the lines that were drawn across the page — the occupation that has the most stars. Then ask students to draw a vertical line down the page under the name of this occupation.

CIVILIAN OCCUPATIONS FEATURES	Accountant/CPA	Accounting Clerk/Bookkeeper	Actuary	Aerospace Engineer	Agricultural Scientist	Air Traffic Controller	Aircraft Mechanic	Aircraft Pilot	Architect	Automotive Body Repairer	Automotive Mechanic
PUT YOUR MARK HERE →											
◀											
VALUES:											
HIGH INCOME				★		★		★			
MEDIUM INCOME											
INDEPENDENCE											
HELPING OTHERS											
LEADERSHIP											
LEISURE											
SECURITY											
VARIETY											
PRESTIGE											
INTERESTS AND SKILLS:											
WORK WITH PEOPLE											
WORK WITH HANDS/EQUIP.											
COMMUNICATE											

[Figure 6-1] OCCU-FIND Example — stars for high income value

This vertical line will cause more stars to appear, showing other features of the occupation.

Step 3: Finding Related Military Occupations. Drawing the vertical line down the column also shows students the ASVAB occupational group for the related military occupation and the 50-50 SCORE if this is an enlisted occupation.

Counselor's Role: The most important role for the counselor in this section of the workbook is to help students understand what is on OCCU-FIND and how to use the ASVAB marker with OCCU-FIND. Remind students that, to see all of the occupations that have a particular *feature*, they must draw a horizontal line across the front and back of the chart. To see all the features of an *occupation*, they must draw a vertical line down the page under the name of that occupation.

You may find it helpful to draw a facsimile of a portion of OCCU-FIND on the blackboard to illustrate where and how to draw the lines. Or you may use one student's OCCU-FIND chart and marker to demonstrate how to draw the horizontal and vertical lines.

Inform students that, although they are looking at only one occupation now, they should go back to the workbook later and use their ASVAB markers to find other OCCU-FIND occupations that have lots of stars, indicating features they desire.

It is important for students to understand that the military occupations listed on the ASVAB chart involve work-related tasks and activities that are similar to the civilian occupations listed at the top of the same column; however, education/training requirements can differ because training required for civilian occupations may not always be required in the military. You may want to mention that, for enlisted occupations, the training is usually *provided* in the military. Students should also understand that military occupations may not involve the same features as the related civilian occupations. Finally, students should be aware that some civilian occupations (like farmer) have no related military occupation and that some military occupations (like special operations forces) have no related civilian occupation.

When students reach the third step in using OCCU-FIND (Finding Related Military Occupations), you will want to spend a few minutes explaining about enlisted and officer occupations. Tell students that they can learn more about the enlisted occupations that appear on OCCU-FIND and others from the *Military Career Guide*. For officer occupations, inform students that the *Academic Ability* score can help them estimate their chances of completing college and, thus, qualifying to apply to become an officer. (The officer occupations are marked on OCCU-FIND with an asterisk.) Point out where the *Academic Ability* score is located (Grade/Sex Percentile section) on *Your ASVAB Results*.

HITS AND MISSES: Is An Occupation Right for You? (pages 59-63), including *Making a HITS AND MISSES STRIP* (page 63)

Purpose: To introduce students to the HITS AND MISSES concept (how well the features of an occupation match the features that are important to the student); to show students how to determine how well occupations identified on OCCU-FIND match the features that are important to them.

Exercise: Students first read a cartoon that introduces the HITS AND MISSES STRIP concept. Then they read the directions for the use of these strips and tear one **HITS AND MISSES STRIP** out of the back of their workbook (page 91).

- At the top of the strip, they write the name of the occupation they selected on OCCU-FIND (the one with the most stars, for which they drew a vertical line down the page).
- Next, they place the strip on OCCU-FIND, to the right of the column for that occupation (be sure that the blue arrows at the top of the strip line up with the arrows on OCCU-FIND as shown in Figure 6-2) and put a plus mark (+) in the HAS column to correspond to the stars under the name of that occupation on OCCU-FIND.
- If there is a related military occupation, students write its name at the bottom of the **HITS AND MISSES STRIP** along with the name of the ASVAB occupational group and the 50-50 SCORE for this military occupation. For military occupations with 50-50 SCORES, students are asked to refer back to their ASVAB scores and to write in their own *Youth Population Percentile Scores* for these occupational groups.
- To determine which features are HITS and which are MISSES, students put the strip next to their Summary Sheet (be sure that the blue arrows on the strip line up with the blue arrows on the Summary Sheet as shown in Figure 6-2) and compare the pluses on the Summary Sheet with the pluses in the HAS column. If both the Summary Sheet and the HAS column have pluses for a given feature of the occupation, students put a plus in the HITS column. If the Summary Sheet has a plus but the HAS column is blank, the students put a minus in the MISSES column. If the occupation has a feature that the students definitely do not want, they also put a minus in the MISSES column. All other lines should be left blank. (See Figure 6-3)

Counselor's Role: Because the directions for making the HITS AND MISSES STRIPS are fairly complex, counselors should first be sure that students have followed the directions successfully. It helps to break this task into two stages:

1. Copy information about the selected occupation from OCCU-FIND onto the strip. This includes writing the name of the occupation; identifying the key occupational features by making pluses in the HAS column to correspond to the stars on OCCU-FIND; copying the name and ASVAB score information for the related military occupation; and, if there is a 50-50 SCORE, transferring the appropriate *Youth Population Percentile Score* from the student's ASVAB results.
2. Determine the match or mismatch between the HAS column of the strip and the student's Summary Sheet.

CIVILIAN OCCUPATIONS FEATURES	Accountant/CPA	Accounting Clerk/Bookkeeper	Actuary	Aerospace Engineer	Agricultural Scientist	Air Traffic Controller	Aircraft Mechanic	Aircraft Pilot	Architect	Automotive Body Repair	Automotive Mechanic
PUT YOUR MARK HERE →											
◀──											
VALUES:											
HIGH INCOME				★							
MEDIUM INCOME	★		★	★							
INDEPENDENCE				★							
HELPING OTHERS				★							
LEADERSHIP											
LEISURE											
SECURITY	★	★	★								
VARIETY				★							
PRESTIGE				★							

HITS AND MISSES STRIP

OCCUPATION

◀ AEROSPACE ENGINEER ▶

HAS	HITS	MISSES
+	____	____
+	____	____
+	____	____
+	____	____
____	____	____
____	____	____
____	____	____
+	____	____
+	____	____

MILITARY OCCUPATION

AEROSPACE ENGINEER

The ASVAB occupational group for this occupation is ____

The 50-50 Youth Population Score for this occupational group is ____

My Youth Population Percentile Score for this occupational group is ____

[Figure 6-2] Making a HITS AND MISSES STRIP

HITS AND MISSES STRIP

OCCUPATION
◀ AEROSPACE ENGINEER ▶

HAS	HITS	MISSES
+	+	
+		+
+		
+		
+	+	
+	+	
+	+	
+	+	
+	+	
		+

MILITARY OCCUPATION
AEROSPACE ENGINEER

The ASVAB occupational group for this occupation is ____

The 50-50 Youth Population Score for this occupational group is ____

My Youth Population Percentile Score for this occupational group is ____

SUMMARY SHEET

VALUES:

+	HIGH INCOME
	MEDIUM INCOME
	INDEPENDENCE
	HELPING OTHERS
	LEADERSHIP
	LEISURE
	SECURITY
+	VARIETY
+	PRESTIGE

INTERESTS AND SKILLS:

	WORK WITH PEOPLE
+	WORK WITH HANDS/EQUIPMENT
+	COMMUNICATE
	ORGANIZE INFORMATION
	WORK WITH MATH
+	WORK WITH COMPUTERS
	WORK IN THE ARTS
+	GIVE ATTENTION TO DETAIL

[Figure 6-3] Summary Sheet

Be sure to tell students that later they can use their workbooks and make additional **HITS AND MISSES STRIPS** for other occupations. (Additional strips are included in the back of the workbook.)

Other Occupations: What's Not On OCCU-FIND? (pages 65-68), including *Other Things to Consider* (page 68)

Purpose: To remind students that the ASVAB workbook and OCCU-FIND list only a few of the thousands of possible occupations that exist today.

Exercise: There is no specific exercise for this part of the workbook.

Counselor's Role: The objective is to introduce students to occupations that are not included on OCCU-FIND and help them widen their occupational horizons. After the students have read this section of the workbook, encourage them to name occupations that are not listed on OCCU-FIND. Ask students to identify other values and interests and skills that are not included in the ASVAB workbook. These can be as specific as "living near good skiing" or as vague as "work that is creative." This is also a good time to talk with students about marriage, parenthood roles, and lifestyle considerations and their potential influence on occupational choice. Questions that might be discussed: What are the trade-offs between work and family? How can one plan a career that includes both?

Making Plans: What Happens Next? (pages 69-90), including *Next Steps: Things to Do Later, Working with OCCU-FIND, Making More HITS AND MISSES STRIPS,* Learning More about Occupations, *DECIDING SQUARES: Making a Choice*

Purpose: To help students understand that the ASVAB workbook is only a first step in career exploration and planning; to stimulate students to do additional activities with the workbook, such as (1) using OCCU-FIND to identify more occupations that provide what the students want, (2) making **HITS AND MISSES STRIPS** for these occupations, (3) learning more about the occupations that interest them and the education/training required; and (4) learning to use DECIDING SQUARES to make tentative occupational decisions.

The introduction to this section is intended for use as a wrap-up for the one or two class period group sessions. The remaining material is provided to help students continue the career exploration they have begun with the ASVAB workbook. These exercises can be completed with or without counselor involvement.

Exercises: Students are encouraged to continue the activities they began in the workbook, especially identifying additional occupations on OCCU-FIND and making **HITS AND MISSES STRIPS** for these occupations. The students are then asked to do four things:

1. Learn more about the occupations that interest them by using the *Occupational Outlook Handbook, Military Career Guide,* and the

school's other career information resources, such as computerized career information or guidance systems;

2. Talk with parents, teachers, school counselors, and people in the occupations they are considering to benefit from their knowledge and suggestions;
3. Complete the Occupational Information Worksheets (pages 75-81), to organize and summarize the information they have acquired including how to obtain and pay for the education or training needed to enter these occupations; and
4. Use DECIDING SQUARES (pages 83-87) to evaluate the desirability of occupations and chances of success in those occupations. In this last exercise, students are asked to take the occupations that interest them and for which they have obtained information and use DECIDING SQUARES to compare them.

Counselor's Role: The counselor's role differs according to the time available. If one or two class periods are available for working on the ASVAB workbook, the counselor will probably not be able to do more than introduce each of the four activities in this section. When a longer time period is available, counselors can provide directions for completing an activity, allow students to work independently on the tasks, and conduct discussions afterward. *Learning More about Occupations* and *DECIDING SQUARES: Making A Choice* will require the most explanation and guidance.

When discussing occupations, you can review the relationship between education and employment. Tell the students about the various education and training information resources that are available to them.

When working with DECIDING SQUARES, you will want to ensure that students understand that they rate each occupation twice, first on desirability and then on chances of success. You can also point out that deciding involves not only learning the decision- making process (taught in this section) but also having valid and sufficient information on which to make a decision. This is also a good time to teach students that many factors enter into the concept of chances, including one's own ability, the labor market (job openings), and the amount of competition in the occupational field.

Using the Workbook in Different Ways

Each counselor can decide how best to use the ASVAB workbook with an individual or group of students. However, two basic options are offered: for option A, begin on page 43 with an explanation of the ASVAB test scores and then return to the earlier exercises in the workbook; for option B, work through the exercises in order.

The ASVAB workbook can be tailored to almost any classroom or guidance and counseling situation. While we often deliver "one-on-one" counseling, there are advantages to providing ASVAB results in a group situation. Since there are so many different types of scores (e.g., academic ability scores, occupational scores), students will see that they and their friends are likely to do some things well and other things less well.

The workbook is designed so that counselors have considerable flexibility in using it with students. The following section contains suggestions for using the workbook, according to the amount of time available for direct use with students.

The Time Available

There are many ways to use *Exploring Careers: The ASVAB Workbook*. The chart on page 84 provides suggestions based on the time that may be available. Notice that exercises can be completed by students prior to class, in class, or after class. As noted above, you can begin with an interpretation of ASVAB scores on page 43 of the workbook or go through the exercises in the order in which they are presented.

One Class Period (about 40 minutes)

If you have only one class period, the session should be devoted to helping students understand their ASVAB scores and learning how to use them for career exploration purposes. Distribute the ASVAB workbooks to students several days (but not more than a week) before the scheduled class period. Ask students to read pages 1-42 of the workbook and to complete the exercises about their values, their interests and skills, things they may want to avoid, and their educational goals. Students should complete the workbook up to and including the preparation of a Summary Sheet. Have students come to the scheduled class period with their ASVAB workbooks and pencils to complete the remaining exercises. Distribute the ASVAB markers and *Your ASVAB Results* when students arrive in class. (Note: Students will be unable to complete *Learning How to Use the ASVAB Workbook* in the section *Which Career For You*, which requires the ASVAB marker, if this approach is used. Be sure students are told to omit this activity in their preparation.)

During one class period, you can (1) distribute ASVAB score results and (2) help students complete the activities for the following sections:

- ASVAB Scores: What Do They Mean? (pages 43-52)
- *Learning How to Use the ASVAB Workbook* (page 6)
- OCCU-FIND: A Chart for Finding Occupations (pages 53-58)
- HITS AND MISSES: Is an Occupation Right for You? (pages 59-63)
- Other Occupations: What's Not on OCCU-FIND? (pages 65-68)

The section *Making Plans: What Happens Next?* should be introduced and discussed in class but, except for unusually fast-moving groups or longer class periods, there will not be time to complete the activities in this section.

In this presentation mode, the majority of the time period should be spent on ASVAB score interpretation, OCCU-FIND, and HITS AND MISSES sections. This will enable students to understand their scores and how to use the scores for career exploration.

Two Class Periods (about 80 minutes)

There are two approaches to using the workbook if two class periods are available. These are summarized in the chart on page 84. The basic difference is whether the ASVAB scores are presented on the first day, before students do the other workbook activities, or on the second day. For either approach, be sure each student has a pencil with an eraser to use in completing the workbook exercises.

For option A, distribute the workbooks and ASVAB markers at the beginning of the first class period. This period will be devoted to having students read the first six sections of the workbook (*Which Career for You?*; *Values: What Do You Want?*; *Interests and Skills: Activities You Like and Do Well*; *What You Feel You Must Avoid*; *Education: How Much? What Kind?*; and *Preparing a Summary Sheet*), completing the exercises in these sections, and discussing these activities to the extent that time allows. Plan to spend about five minutes on each section. Any time available at the end of the period can be used for discussion of the exercises. At the beginning of the second class period, distribute and discuss *Your ASVAB Results*. (Allow about 10 minutes for this activity and the related workbook section.) Then have students use OCCU-FIND to identify *one* occupation and complete a **HITS AND MISSES STRIP** for that occupation. (Allow about 15 minutes for these two activities.) Use the remainder of the class time to have students read and briefly discuss the remaining workbook sections (*Other Occupations*; *What's Not on OCCU-FIND*; *Making Plans: What Happens Next?*; and *Next Steps: Things to Do Later*).

For Option B, distribute the workbooks, markers, and ASVAB scores at the beginning of the first class period. Discuss the scores and have students read the related workbook section (*ASVAB Scores: What Do They Mean?*). Allow approximately 10 minutes for this activity. Then have students read the first six workbook sections (through *Preparing a Summary Sheet*) and complete the exercises in these sections. With this approach, there will be very limited time for discussion of the exercises. In the second class period, have students read the section about OCCU-FIND and ask each to identify one occupation that provides many features that he or she wants. Then have them read the workbook section *HITS AND MISSES: Is An Occupation Right for You?* and complete a **HITS AND MISSES STRIP** for that occupation. This presentation mode will allow you to spend about 20 minutes on these two activities. Use the remainder of the class period to have students read and discuss the remaining workbook sections (*Other Occupations*, *Making Plans*, and *Next Steps*).

Three Class Periods (or more)

To use the workbook in three class periods or more, begin with the same sequence as for two class periods, using either option A or option B. Distribute the materials to the students and have them complete the exercises for the first and second class periods as outlined above and in the chart on page 85. The third class period allows time to present the following workbook sections: *Working with OCCU-FIND*, *Making More HITS AND MISSES STRIPS*, *Learning More about Occupations*, and

ASVAB Workbook Use Summary

Time Available	Do Prior To Class	Do In Class	Do After Class
ONE CLASS PERIOD	Which Career for You? Values: What Do You Want? Interests and Skills What You Feel You Must Avoid Education: How Much? What Kind? Preparing a Summary Sheet	ASVAB Scores: What Do They Mean? OCCU-FIND HITS AND MISSES Other Occupations Making Plans: What Happens Next? Next Steps: Things to Do Later	Working with OCCU-FIND Making More HITS AND MISSES STRIPS Learning More about Occupations DECIDING SQUARES: Making a Choice
TWO CLASS PERIODS Option A		*First Day* Which Career for You? Values: What Do you Want? Interests and Skills What You Feel You Must Avoid Education: How Much? What Kind? Preparing a Summary Sheet	
		Second Day ASVAB Scores: What Do They Mean? OCCU-FIND HITS AND MISSES Other Occupations Making Plans: What Happens Next? Next Steps: Things to Do Later	Working with OCCU-FIND Making More HITS AND MISSES STRIPS Learning More about Occupations DECIDING SQUARES: Making a Choice
TWO CLASS PERIODS Option B		*First Day* ASVAB Scores: What Do They Mean? Which Career for You? Values: What Do You Want? Interests and Skills What You Feel You Must Avoid Education: How Much? What Kind? Preparing a Summary Sheet	Working with OCCU-FIND Making More HITS AND MISSES STRIPS Learning More about Occupations DECIDING SQUARES: Making a Choice
		Second Day OCCU-FIND HITS AND MISSES Other Occupations Making Plans: What Happens Next? Next Steps: Things to Do Later	

ASVAB Workbook Use Summary

Time Available	Do Prior To Class	Do In Class	Do After Class
THREE CLASS PERIODS OR MORE* (Three-Day Sample)		*First Day* Same as for two class periods, using either Option A or Option B *Second Day* Same as for two class periods, using either Option A or Option B *Third Day* Working with OCCU-FIND Making More HITS AND MISSES STRIPS Learning More about Occupations** DECIDING SQUARES: Making a Choice***	Continue occupational exploration Make DECIDING SQUARES

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*If you are using the workbook for several class periods, select Supplementary Exercises, provided on pages 33-37, to enrich the students' experience. For example, you could devote a full day to Values, beginning with the workbook exercise and then going on to (1) have the students talk about other values they seek in a career and identify additional values not included in the workbook exercise; (2) explore the value "Leadership" by discussing the advantages and disadvantages of being a leader (use the cartoon to point out that leaders get blamed when things go wrong as well as praised when things go well); and (3) explore the value "Prestige" and complete the worksheet about occupational prestige.

**Use the classroom time to introduce the students to sources of occupational information. Explain that they will investigate the occupations of interest to them after class (or in later class periods).

***Use the classroom time to introduce the students to the DECIDING SQUARES and explain their use. Tell the students that they can make DECIDING SQUARES only after they have investigated the occupations that interest them. If possible, provide time to have each student make DECIDING SQUARES in a later class period, after the students have obtained the needed occupational information.

best copy available

DECIDING SQUARES. Use the class time to introduce the students to sources of occupational information and to explain how to use the DECIDING SQUARES. Have students continue occupational exploration activities of interest after class, finding specific information about occupations of interest to them and completing an Occupational Information Worksheet for each occupation. After students have obtained the information about occupations, they can complete DECIDING SQUARES for those occupations. If time is available in a later class, review the DECIDING SQUARES with the students; this exercise is one of the most difficult for students to complete alone.

If you plan to use the workbook as part of a career guidance course, you can adjust the activities to the time that is available. In this case, it is recommended that you begin by distributing the ASVAB scores and by completing the section of the workbook about ASVAB score interpretation. (This is to ensure that students receive their test results as soon as possible after having taken the ASVAB test.) Then have students read and complete the other workbook sections. At the end of each workbook section, have students complete one or more of the supplemental activities and exercises for that section. The directions for each exercise have been worded so that they may be photocopied and distributed to students if desired. (These activities and exercises appear on pages 87-97 in this chapter.)

Size of the Group

Regardless of the size of the group, it is important to help students understand that the workbook exercises are not a test; they are a way for students to find out more about themselves and the world of work. Encourage students to work together with partners or in small groups and to help each other with the exercises. For students with limited reading ability, groups of four students can read the comic strips aloud, each student taking the part of one character.

Large Groups

Forming large, classroom-size groups is often the most efficient way of providing information for students. *Your ASVAB Results* and *Exploring Careers: The ASVAB Workbook* can be distributed and explained by a counselor or a counselor and teacher team.

Small Groups

Distributing *Your ASVAB Results* and the workbooks to students in small groups provides the opportunity for more interaction and discussion than might be possible in a large group. Students may feel less inhibited about asking questions, and counselors can provide more personalized responses. Small groups also provide increased opportunity for students to talk with each other about their values, interests, aptitudes, and career plans.

Individual Use

Optimally, the workbook should be used in a group setting. However, this is not always possible. Individual use may be the only available option in some cases. It is less desirable for counselors to distribute the workbooks for students to use on their own, but the workbook is designed so that students can use it alone.

When it is necessary to have students complete the workbook activities alone, it is desirable that, if at all possible, counselors schedule a short session with a group of students. Counselors should explain students' ASVAB scores and explain how to use the workbook. Afterwards, students can complete the workbook exercises individually or with partners. Then have students meet with a counselor individually to discuss the workbook results. In this discussion, determine first if the student has any questions about the score report or about the workbook. The occupations the student selected using OCCU-FIND and the HITS AND MISSES STRIPS should be identified. The counselor can help the student summarize what he or she has learned and help outline the next steps to take in career exploration. (See the Case Studies section of this chapter for more material about how individual sessions might be handled.)

Career decision making is a lifelong process. The information and exercises in the ASVAB workbook are intended to help students learn processes for career exploration: thinking about their own abilities, values, and interests; evaluating the features of different occupations; gathering occupational information; and making sound decisions. Students will learn that they must be active participants in deciding their own futures and that only they can make good career decisions for themselves. Counselors and teachers can help students learn these important concepts.

Supplementary Activities for Students

Which Career for You? (page 6)

Individual Activities

An Occupational Family Tree: Have students construct occupational family trees. First, have them draw family trees and label their family members (parents, etc.). Then have them write in what kind of work is/was done by each of them (for example, an older sister as a chemical laboratory technician, father as a retail salesworker, mother as a school teacher, father's father as a farmer, father's mother as a homemaker, mother's father as a textile mill worker, and mother's mother as a dressmaker).

Pose these questions to students: Have the occupations of your family members changed because of technology or new methods? Does your family want you to choose one of these occupations? If so, which one and why? Are you like the person in this occupation? If so, in what ways? How are you different from the person in this occupation?

Career Patterns: Ask students to find out how other people have made career choices. Suggest that they talk to their parents, grandparents, other older relatives or friends, or their employers, or that they read a biography or oral history that describes the "career pattern" of a famous person. (For example, students who are considering becoming doctors might read *In Her Own Words: Oral Histories of Women Physicians*, a book edited by R. M. Morantz, C. S. Pomerleau, and C. H. Fenichel that has oral histories about the careers of women physicians, or they might talk with their family doctors.) Some questions are

- What were the career decision points in this person's life?
- How were career decisions made?
- Were the decisions always "good" or "right" for this person?
- What different jobs has this person held?
- Were these jobs in the same or different occupations?
- How did this person prepare for each job?
- How did this person make the change from one job/occupation to another?
- Do you think the jobs held by this person add up to a career, or were they a series of unrelated things?

Life Planning: Have students make life-plan charts using the supplementary exercise entitled "Life Planning." (A worksheet is on pages 93 and 94). This exercise can be used as the basis for a discussion of the significance of the questions raised and the life-long nature of career planning.

Groups Activities

Locus of Control: Have students, discuss the importance of planning and control in their lives. For example, you might ask, "Do you feel that planning is important and gives you control over your life? Or do you feel that planning is useless?" Or you could have students start with the "Locus of Control" exercise on page 97 and then discuss the group results. Help students discuss the concept that planning improves luck.

Values: What Do You Want? (pages 13-18)

Individual Activities

Prestige and Occupations: Help students explore the value "Prestige" by using the "Prestige and Occupations" worksheet (page 95). Have them list the things they think people might consider when rating an occupation's prestige.

Group Activities

Additional Values: Discuss with students the values they seek in a career. Brainstorm additional values that could be added to those listed in the workbook, such as opportunity to travel, meeting new people, responsibility, opportunity for advancement. Be sure students understand the difference between a value and an interest — for example, "work that is fun" is not a value.

Exploring Leadership: Explore the value "Leadership" by discussing the advantages and problems of being a leader. Ask students to discuss or write about experiences they have had in being leaders. What did they learn from these experiences? If students have not had leadership experiences, suggest that they may want to seek out such experiences to find out if they like being leaders.

Occupational Values and Job-Specific Values: Discuss the difference between occupational values and job-specific values. Examples of job-specific values are work near home, work that is available by public transportation, work where the employer will pay for additional education, work that does not involve overnight travel, work where there are friendly co-workers, etc. What job-specific values are important to different people? Compare these to occupational values given in the workbook. Discuss how students can find out about these job features during employment interviews.

Other Values Inventory: Administer a comprehensive work values instrument, such as the Work Values Inventory. Discuss the results. Do they agree with the values students chose in the ASVAB workbook? What other values did students find that are important to them?

Interests and Skills: Activities You Like and Do Well (pages 19-25)

Individual Activities

Relating Interests and Skills to Occupations: For each of the interest and skills areas in the ASVAB workbook, have students list at least two reasons why they would or would not want to consider occupations that involve these activities.

Using the Guide for Occupational Exploration: Ask students to find out how to locate and use the *Guide for Occupational Exploration*. This book has information about occupations organized into 12 interest areas: artistic, scientific, plants and animals, protective, mechanical-industrial, business detail, selling, accommodating, humanitarian, leading-influencing, and physical performing. Have students pick one of these interest areas and read about the types of work involved, the personal preferences of people in this type of work, the skills and abilities required, other things to consider about this kind of work, how to prepare for this kind of work, the licenses and certificates needed for this kind of work, and where to get more information about this type of work. After students have finished reading, ask them to give two reasons why they do or do not want to explore this kind of work further.

Group Activities

Data/People/Things: Discuss how occupations are classified in the *Dictionary of Occupational Titles*. Have students use the "Data/People/Things" worksheet (page 96) to rate the 10 occupations listed. Show students how to use the *Dictionary of Occupational Titles* to see how these occupations are rated there.

Interest Inventory. Administer an interest inventory. How do the results compare with the interests and skills students selected in the ASVAB workbook? What other interests did students discover that are important to them?

What You Feel You Must Avoid (pages 27-31)

Individual Activities

Examining Dislikes: Have students keep a record of things they do not like doing. Ask them whether it is the activity itself they don't like or the situations in which they have to do the activity.

Overcoming Dislike of Public Speaking: Ask students to list five "safe" ways or places in which a person could get practice in public speaking.

Education: How Much? What Kind? (pages 33-39)

Individual Activities

Analyzing Educational Decisions: Have students pick an educational decision that they must make soon, such as the courses that they might take next term or next year or the colleges that they might apply to. Ask them to list the alternatives. (For example, will they take another year of mathematics, another year of a foreign language, a computer science course or an art course?) Then have them list the possible decisions and the possible consequences for each decision. (For example, if a student decides not to take another year of math, he or she may not be able to enter training programs for many occupations in science, health care, or technology.)

Thinking about the Military. Suggest that students who are interested in entering military occupations obtain a copy of the *Military Career Guide* from their counselor and read the list of "Helpful Courses" for the military occupations that interest them. If they haven't taken these courses, suggest that they talk with their counselor about taking them.

Group Activities

Educational Opportunities: Discuss ways students could get more education after finishing school. Include community and junior colleges, four-year colleges, occupational training schools, apprenticeship programs, on-the-job training schools, and independent study. Ask students to describe the advantages and disadvantages of each type of education. Be sure to include the costs and the likely financial benefits.

Using ASVAB Scores for Military Career Exploration (pages 49-52)

Individual Activities

Using the ***Military Career Guide*****:** Explain to students how to use the *Military Career Guide* to explore military occupations. Ask them to read the sections about how to use the *Military Career Guide* and about how to use the ASVAB Graph; have students pick out three military occupations that sound interesting to them and use the ASVAB Graph to find out what ASVAB occupational group each occupation is in and to find out what percentage of people with *Youth Population Percentile Scores* like theirs qualify for each of these occupations.

OCCU-FIND: A Chart for Finding Occupations (pages 53-58)

Individual Activities

Exploring Nontraditional Roles: Suggest that students create a series of posters or displays illustrating women and men working in a variety of nontraditional occupations. Examples might be women working as mechanics or doctors, and men working as secretaries or nurses.

Group Activities

Occupations from New Technology: Ask students to develop a list of 10 occupations that have come into existence in the last 10 years as a result of new technology. Also ask students to develop a list of 10 occupations that have changed greatly in the last 10 years as a result of new technology. Ask them to describe each change briefly.

HITS AND MISSES: Is an Occupation Right for You? (pages 59-63)

Individual Activities

Differentiating among Occupations: Have students find two occupations with similar pluses on the HAS column of the **HITS AND MISSES STRIPS** in the ASVAB workbook (or with a similar pattern of stars on OCCU-FIND). Ask them to find out how these occupations are alike and how they differ from each other. Discuss where to find school resources with material about each of these occupations or show them how they can use the *Occupational Outlook Handbook* to read about these occupations.

Eliminating Occupations: Suggest that students find an occupation that does *not* match the features they marked on their Summary Sheets in the ASVAB workbook (that is, an occupation that would have few HITS or no HITS if the student made a **HITS AND MISSES STRIP** for it). Have them read about this occupation and then write about why it would not be a good occupation for them.

Other Opportunities: What's Not on OCCU-FIND. (pages 65-68)

Individual Activites

Results of Decision Making: Ask students to read a vocational biography. Then ask them to describe how a career decision made by the subject influenced areas of her or his life, such as overall lifestyle, choice of friends, marriage, parenthood, and family life.

Using Computerized Career Information Systems: Have students use a computerized career information or guidance system to find out more about other occupations they might want to explore.

Overcoming Sex-Role Stereotyping: Give students the names of the following six occupations, which are often stereotyped as to sex roles (explain that people tend to think of them as being done mostly by women or mostly by men): nurse, secretary, hairdresser, construction worker, truck driver, equipment repairer. Ask students to read about each occupation in *Occupational Outlook Handbook* or other occupational materials. Have them answer the following questions: What are the requirements for these jobs? Are there any reasons why these jobs cannot be done equally well by men and by women? Why are sex-role stereotypes a poor indicator of the real requirements of an occupation?

Making Plans: What Happens Next? (pages 69-81)

Individual Activities

Long-Range Planning: Ask students to write long-range career plans for themselves. Some questions to consider are as follows: What steps must they take to reach their goals? What can they do now and what must they wait to do until after they finish school? Include possible alternatives. For example, if a student wants to become a developer of computer software, he or she could learn computer programming in a course in high school, in a technical school or college, in the military service, or independently. Ask students to consider what might be the consequences of using the various routes to reach the career goal.

Decisions and Their Consequences: Have students list some important decisions about the future that they must make within a few months, this year, in a couple of years, in five years, and in ten years. What are three different choices they might make for each of these? What would be the likely consequences of each decision?

Information to Solve Problems: Ask students to identify career-related problems they need to solve, e.g., comparing two or more occupations, selecting a college or technical school, or finding financial assistance for further education. Have them ask their counselors or school librarian about the information sources that might help them make decisions.

Interviewing Incumbents: Suggest that students interview a person in an occupation that interests them. The focus of the interview can be as follows: How is this person's occupation part of her or his lifestyle? What are the other roles, beside worker, in this person's life (such as parent, student, etc.)? How does this person combine these roles with his or her work?

DECIDING SQUARES: Making a Choice (pages 83-90)

Individual Activities

Other Decision-Making Processes: Suggest that students read a book about career decision making, such as *How to Decide.*

Factors in Decision Making: Recommend that students select three decisions they have made in the past and describe how the decisions were influenced by some external factors, such as family, friends, geography, or coincidence.

Considering Labor Force Trends: Suggest that students use the *Occupational Outlook Handbook* or other reference material to find out how labor force trends (number of people employed, kinds of jobs they are employed in, etc.) have changed over the past 10 years and what the predictions are for the next 10 years. Ask them to think about whether these changes will affect their career decisions? If so, how?

Group Activities

Brainstorming Decision-Making Dilemmas: Identify and brainstorm decision-making dilemmas — for example, wanting to be a professional athlete but not having the ability or the size necessary; wanting to enter an occupation like acting where the competition for jobs is very keen but needing to have a steady income to support oneself and one's family; wanting to enter a profession that takes many years of education and training but also wanting to marry and start a family soon. Discuss possible solutions for these dilemmas.

Preparing A Resume: Help students prepare resumes that they could use in applying for work. Show them how to describe their objectives, the kind of work they want, and their skills and experiences (what they can do; where they learned their skills).

These supplemental activities are only a few of the many possibilities for building on the ASVAB workbook. You can use your counseling expertise and experience to choose among these activities, to add other activities, and to adapt these activities and the ASVAB workbook to the students with whom you work.

Supplementary Exercise — Life Planning

Deciding what you are going to do when you finish school is only one part of the process that we call CAREER AND LIFE PLANNING. Career exploration is the first step in making a life plan. You also need to think about the things that you may be doing besides working, such as getting married, having children, and continuing your education. Let's think of your life as a line.

Birth 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49

50 51 52 53 54 55 56 57 58 59 60 Older

When have you been or will you be in school? (Put the letter *S* above the number that gives your age when you started school and another *S* above the number that gives your age when you expect to complete school.)

When will you get married? (Put the letter *M* above the number that gives the age at which you expect to get married. If you are already married, put it above the number of your age when you married. Check here if you do not expect to get married. ______

How many children do you expect to have ______ At what age(s) will you have these children? (Write a *C* above the age at which you expect to have each of your children. If you already have a child, write a *C* above your age when you had your first child. Check here if you do not expect to have children. ______

When will you be working *full time?* (Write *FW* above the ages at which you expect to start working full time and stop working full time.)

When will you be working *part time?* (Write *PW* above the ages at which you expect to start working part time and stop working part time.)

When do you expect to be in the military? (Write *MS* above the ages at which you expect to enter and leave the military service. If you do not expect to be in the military, check here. ______

Now let's put all these pieces together. Use colored pens or pencils for the different things you will be doing during your life.

a. Make a red line under the years you will be in school. For example, if you expect to be in school until you are 22, draw a red line from your age when you started to the number 22.

b. Then draw a blue line from under the M, past all the numbers until you reach the word "older." (This may be a good time for you to think about how the death of your marriage partner or divorce might affect your life and your career plans.)

c. Then draw a green line from under each C to the age 18 years beyond it. (For example, if you expect to have your first child at age 25, draw a green line from under the 25 to under the 43. Most children live at home with their parents for about 18 years.)

d. Draw a brown line under the years when you expect to be in military service.

e. Draw a black line under the years when you expect to be working full time.

f. Draw a yellow line under the years when you expect to be working part time.

At what ages will you be doing several things (such as working and going to school, or working, marriage, and rearing children) at the same time? How can you best plan your life to manage all these roles? About how old will you be when your children have left home (18 years after the birth of your youngest child)? Will you want to be doing something different after your children are school age or are living away from home?

Supplementary Exercise: Prestige and Occupations

In the ASVAB workbook, you had a chance to choose prestige as one of the values that is important to you. Did you choose prestige as one of your values? Yes______ No______

Name three occupations that you think have a lot of prestige.

Why do you think these occupations are prestigious? ______________

Here are some prestige ratings for a few occupations. The higher the number, the greater the prestige people thought the occupation had.

Architect	67	Tool and die maker	42
Computer programmer	51	Plumber	41
Industrial engineer	64	Butcher	32
Lawyer	75	Farm manager	44
Librarian	55	Janitor	20
Dentist	74	Bus driver	32
Registered nurse	60	Dental Assistant	48
Radiologic technologist	61	Airline attendant	36
Recreation worker	49	Police officer	48
Elementary school teacher	59	Secretary	47
Bank teller	50	Radio/TV announcer	51
Real estate agent	44	Electrician	49
Airplane pilot	70	Musician	46
Automobile mechanic	37	Carpenter	38
Restaurant manager	39	Bookkeeper	47

What things do you think influenced these ratings? ______________

How important do you think the amount of money people make in an occupation is in these ratings? How important do you think the amount of education required in an occupation is in these ratings?

Supplementary Exercise: Data, People, Things

One way of thinking about different occupations is the kind of work they involve with data and other kinds of information, with people, and with equipment and other things. These are sometimes called worker functions. Every occupation involves all three of these worker functions. Working with data and information includes working with words and ideas, as well as with numbers and diagrams; it can range from comparing and copying information to synthesizing and coordinating information. Working with people can range from taking orders and serving people to leading people. Working with equipment and other things can range from operating machinery to precision work and setting up equipment.

Here is a list of 10 occupations. Rate each on how you think it involves working with data, with people, and with things. Rate each category in each of these categories H for high, M for Medium, or L for low. A high rating means that the occupation requires the most difficult kind of work in this area; a low rating means that it requires the least difficult kind of work. (For example, if the category is working with people, a high rating would mean trying to lead or instruct people and a low rating would mean taking orders or serving people.)

	DATA	PEOPLE	THINGS
Accountant	______	______	______
Mathematician	______	______	______
Veterinarian	______	______	______
Social worker	______	______	______
Surveyor	______	______	______
Designer	______	______	______
Health care administrator	______	______	______
Insurance agent	______	______	______
Telephone operator	______	______	______
Dental laboratory technician	______	______	______
Office machine repairer	______	______	______
Truck driver	______	______	______

Ask your counselor to show you how to use the *Dictionary of Occupational Titles* to see how these occupations are rated there for the kind of worker functions they involve with data, people, and things.

Supplementary Exercise: Locus of Control

Some people think that life is mostly a matter of luck and chance. Others think it is possible to have control over much of what happens to you as you go through life. What do you think?

Answer the questions below. Circle the number under the answer you choose — strongly agree, agree somewhat, disagree somewhat, or disagree strongly. There are no right or wrong answers; mark what you think.

	Strongly Agree	Agree Somewhat	Disagree Somewhat	Strongly Disagree
a. Good luck is more important than hard work for success.	1	2	3	4
b. Planning only makes a person unhappy because plans hardly ever work out.	1	2	3	4
c. What happens to me is my own doing.	4	3	2	1
d. Every time I try to get ahead, somebody or something stops me.	1	2	3	4
e. People who accept their condition in life are happier than those who try to change things.	1	2	3	4
f. If I work hard, I will probably get ahead.	4	3	2	1

Now add up the numbers you circled. Your score will be some number between 6 and 24. If your score is between 6 and 12, you probably feel that life is mostly a matter of luck. Talk to your counselor about how you may be able to make your own luck. If your score is between 12 and 18, you probably feel that life is a mixture of luck and planning. Talk to your counselor about how better planning can improve your luck. If your score is between 18 and 24, you probably feel that planning your life helps you control what will happen to you. Have you talked about your plans with your counselor?

Case Studies

No two people are alike, but you have probably discovered in your work as a counselor that certain situations occur again and again. The following case studies are examples of situations that commonly occur. These cases may not match the young people who walk into your office. However, they do provide some suggestions about how to handle common situations.

Case #1 — Tim, 12th Grade

Background

Tim lives in a large city with his parents and two sisters. His mother works part time as a bookkeeper; his father is a personnel manager in a local department store. Tim's parents would like him to go to college after graduation, but Tim is not sure that is what he wants to do. Tim has tried several different kinds of part-time jobs. He has used the money he has earned in these jobs to buy a home computer. In his high school, where about half of the students go on to college, Tim earns Bs and Cs in most of his classes, except for mathematics, where he usually gets As, even in the advanced courses. Tim says that math is his favorite subject. Tim has been actively involved with the school newspaper, selling advertising space to local businesses. Tim has expressed some interest in the military; his father served a tour of duty in the Army, and his cousin is an Air Force pilot.

Tim has received his ASVAB scores and has used the ASVAB workbook in a one-class-period session. He has asked for an individual meeting to discuss his scores and the workbook results.

ASVAB Scores

	Grade/Sex Percentile	Youth Population Percentile
Academic Ability	67	61
Verbal	39	34
Math	91	90
Mechanical & Crafts	42	51
Business & Clerical	90	81
Electronics & Electrical	58	62
Health, Social, & Technology	55	55

Exploring Careers: The ASVAB Workbook Information

At the beginning of the workbook, when asked what occupations he had considered, Tim listed computer programmer, sales, and personnel manager. When he completed the self-assessment exercises, Tim chose high income, independence, and variety as his most important values; he rated working with math, working with computers, and organizing information as his most important interests and skills; and he indicated that he would be willing to complete up to three years of education beyond high school.

When he worked with OCCU-FIND, Tim found that there was only one occupation that had stars for all seven things that were important to him (seven Hits and no Misses) — computer systems analyst. Many occupations had six Hits; these included several kinds of engineering work and several types of sales work.

Counselor Preparation

The counselor reviews Tim's ASVAB scores and student file prior to the meeting. Tim's cumulative record is examined to look for patterns in achievement test scores, grades, interests, course work, and other aptitude test data. The counselor is prepared to

- Explore Tim's interests and abilities;
- Be sure that Tim understands his ASVAB results;
- Help Tim use the ASVAB scores and workbook information in career exploration;
- Help Tim summarize what he has learned about himself; and
- Help Tim outline the next steps he will take.

Interview

Counselor: Tim, how did the ASVAB results and the ASVAB workbook information fit in with the careers you've been considering?

Tim: Well, they weren't much of a surprise. I've always liked math and been good at it. The test results showed that my highest academic score was in math and that my highest occupational score was in business and clerical. I've thought a little about a career where I could work with math and with computers. You know, something like being a computer programmer. On OCCU-FIND, I got the most stars on computer systems analyst; I guess that's pretty much the same thing. I got six stars on a lot of things — occupations like engineer or sales representative.

Counselor: Most of those occupations require four or more years of college.

Tim: Yeah, that kind of bothers me. I really don't want to go to college right now — at least not for four straight years. I'd rather work or do something else for a year or two so I can decide if I really want four years of college.

Counselor: Well, you certainly have the ability to go to college. Look at your ASVAB scores. You are above average in academic ability. You are very high in math. Are you worried because you are below average in verbal ability?

Tim: No, I don't think that will be a problem if I take courses in science or in business.

Counselor: Probably not, but if you decide you want to go to college, there are things we can do while you are still in high school to improve your verbal skills. That way college might be a little easier for you. Have you given any thought to going into the military before you go to college? That would give you some of the "real world" experience you say you want to get.

Tim: Yes, I think I might like to spend some time in the military, especially if I could get a military job where I could learn more about computers. My cousin is an Air Force pilot; he says it is a good career, but I would rather work with computers than fly a plane.

Counselor: Have you used OCCU-FIND to see which occupational score group the computer occupations fall into and what the 50-50 SCORES are for those occupations?

Tim: Yes, it shows that the *Health, Social, and Technology* score is the one to use for Computer Programmer or Computer Systems Analyst. The 50-50 SCORES are lower than my *Youth Population Percentile Score* in that, so I guess I would have a chance for entering one of those occupations in the military.

Counselor: We can probably estimate your chances better than that. Have you looked at the *Military Career Guide*?

Tim: No, I haven't. I wanted to ask you about that.

Counselor: Here it is. You can read about those two occupations and any other military occupation that interests you. The ASVAB graphs in the *Guide* can give you a better idea of your chances of being accepted for and succeeding in training for some specialty in those occupations.

Tim: Hey, look at this! With my score of 55, it looks as if I have a fairly good chance.

Counselor: Yes. And there are lots of other civilian and military careers you might want to explore. You might want to begin by making sure that you understand exactly what people do in the occupations that interest you, like computer systems analyst. Eventually, you can decide if you want to go on for further education or if you'd like to pursue the training offered in the military.

Notes on the Interview

The counselor did not go into a detailed discussion of the ASVAB scores with Tim since it was obvious from his comments that he understood the different scores (academic and occupational) and that he understood the *Youth Population Percentile Scores.* Tim gave the counselor a good idea of his interests in his response to the opening question. The counselor made an effort to help Tim understand that his verbal skills are somewhat low when compared to those of students who attend college; the possibility that these skills can be improved was also introduced. The counselor noted Tim's ambivalence about college and, because of his interest in the military, has suggested that Tim may want to spend some time in the military before beginning college. In another session, the counselor may discuss the financial benefits available to Tim if he enters the military and may see if he has contacted a military recruiter. The counselor will, of course, continue this discussion with Tim and see that he leaves the session prepared to engage in some specific career exploration activities.

Case #2 – Traci, 12th grade

Background

Traci is the youngest child in a family of five children. Her mother is an elementary school teacher and her father is a mid-level corporate executive. Although Traci has never been an outstanding student at the suburban high school she attends (where more than 70 percent of the students go on to college), she has been able to maintain a B average by studying hard. Traci took the ASVAB to try to understand her abilities better; she plans to go to college but has not decided on her college major. Her two older sisters are now in college; her two older brothers have completed college and work as professionals in technological fields.

Traci is very outgoing and enjoys people; she has been a "candy striper" at a local hospital and has worked during the summer at a camp for mentally retarded children. She currently has a part-time job as a receptionist in a dentist's office. Traci's hobbies are dancing and ceramics.

Traci has received her ASVAB scores and has used the ASVAB workbook during a two-class-periods session. She has requested an individual session to discuss her test scores and the workbook. Traci has indicated that she is confused by her ASVAB results.

ASVAB Scores

	Grade/Sex Percentile	Youth Population Percentile
Academic Ability	57	46
Verbal	60	47
Math	66	59
Mechanical & Crafts	73	45
Business & Clerical	93	83
Electronics & Electrical	57	43
Health, Social, & Technology	80	62

Exploring Careers: The ASVAB Workbook Information

When Traci began the ASVAB workbook, she indicated that she had thought about being a nurse, a dental technician, or a dancer. When she did the workbook exercises, Traci selected helping others, variety, and prestige as her most important values. She selected two interests and skills — working with people and working in the arts. Traci did not select anything to avoid. She indicated an interest in occupations requiring up to four years of postsecondary education.

When Traci used OCCU-FIND, she found only one occupation that had stars for all six things she chose as important (six HITS and no MISSES): interior designer. She found many other occupations that had five HITS; these included architect, chemist, clothing designer, counselor, dietician, electrical engineer, environmental health technician, graphic artist, occupational therpaist, registered nurse, social worker, and teacher.

Counselor Preparation

The counselor reviews Traci's ASVAB scores and student file prior to the meeting. Traci's cumulative record includes, in addition to a transcript showing the courses she has taken in school and the grades she has received, scores on the Preliminary Scholastic Aptitude Test, (PSAT) which Traci took in grade 11, and scores on an interest inventory that Traci and all her classmates took in grade 10. Traci's PSAT scores are about average for the college-bound population; her strongest interest in grade 10 was in the artistic area. The counselor is prepared to

- Be sure that Traci understands her ASVAB test results:
- Help Traci use her ASVAB scores and *Exploring Careers: The ASVAB Workbook* in career exploration;
- Help Traci summarize what she has learned about herself;
- Explore Traci's interests and abilities; and
- Help Traci outline the next steps she will take in career exploration.

Interview

Traci (as she rushes into the room): That ASVAB stuff was really a waste of time. I'm more confused than before I took the test and got that workbook.

Counselor: Sit down, Traci, and tell me what it is about the test and the workbook that you found confusing. Maybe we can get it straightened out for you.

Traci: Well, you know I took the test to help me decide what I am good at so I could decide what to major in in college. The stuff I got back about my scores and the stuff in the workbook was about what career to enter, not about what to do in college.

Counselor: But Traci, you know that what you take in college can be important in your career. Do you remember the cartoon at the beginning of the workbook, where the students were talking about what they would do after they finished high school? They began by thinking about themselves, what was important to them, and what they wanted to do. Once they had thought about those things, it was easier to make decisions about the education they needed.

Traci: Yes, I read that, and it made sense for those kids. But I'm really not sure what I want to do. Part of me wants to do something that will help people, like being a nurse, and part of me wants to do something that's got more variety and creativity to it, like dancing or doing ceramics or something else artistic.

Counselor: Lots of people have several different interests and feel the same way you do. Let's begin by talking a little more about you — your test scores, the exercises you did in *Exploring Careers: The ASVAB Workbook* the things you do and like. We may be able to come up with some ideas about careers that will give you everything you want. Or we may have to use the DECIDING SQUARES activity to help you make a decision. Once we've thought a little more about what you want to do, it may be easier to decide what you will do in college.

Traci: OK.

Counselor: Let's start by looking at your ASVAB scores. You say you definitely want to go to college. Your academic scores on ASVAB look good; you have above average scores in all three areas — academic ability, verbal, and math. The bands for these scores overlap. Do you understand what that means?

Traci: Yes. It means that they really aren't very different from each other.

Counselor: That's right. And because these scores are above average, you have good potential for success in college.

Traci: That's a relief. I work hard in school to get that B average my parents expect of me. Sometimes I wonder if I can do as well in college as my brothers and sisters have done.

Counselor: These scores and your PSAT scores look as if you should do all right in college. Now, let's look at your ASVAB occupational scores.

Traci: This is where I started getting confused. My highest score was in the *Business and Clerical* area. I don't understand why that is. I'm not interested in being a secretary.

Counselor: The occupational scores measures your ability, not your interests. And there are lots of occupations in the *Business and Clerical* area besides secretary. For example, you might be interested in being a medical records technician. That requires the kind of business and clerical skills you are good at, and it also involves helping people.

Traci: That's a job I never heard of before. I wonder why it didn't turn up when I did that OCCU-FIND thing? How do I find out more about it?

Counselor: You can read about it in the *Occupational Outlook Handbook* or, if you think you might like to become a medical records technician in the military, you can read about that in the *Military Career Guide*. Let's look at what OCCU-FIND shows about this occupation.

Traci: Oh, now I see why it didn't turn up for me on OCCU-FIND. It involves helping others, but it doesn't provide variety or prestige. Maybe I'd better keep looking.

Counselor: Fine. Now let's go back to your ASVAB occupational scores again. Even though *Business and Clerical* was your highest score, you also had high scores in *Health, Social, and Technology*. And because those score bands overlap, we know that those two scores may not differ significantly from each other.

Traci: Now I'm getting confused again. I wanted to learn more about my abilities, and ASVAB tells me that I'm probably equally good in both of these areas. How can I decide what to take in college? The bands on all my occupational test scores overlap a little. That's part of what confused me. Does it mean that I'm equally good in everything?

Counselor: No. Look at those bands carefully. Your scores for *Business and Clerical* overlap with your score in *Health, Social, and Technology*. Your score in *Health, Social, and Technology* also overlaps with your score in *Mechanical and Crafts*. But your score in *Business and Clerical* does not overlap with *Mechanical and Crafts*. That means that your score in *Business and Clerical* is definitely higher than your score in *Mechanical and Crafts*. But your score in *Health, Social, and Technology* is not significantly different from either your *Business and Clerical* score or your *Mechanical and Crafts* score. Do you understand?

Traci: Yes, I think so. But I'd like to get back to talking about my scores in the health area. They are pretty good, maybe as good as my *Business and Clerical* scores. That's probably what I should do — something in health. I know a few women who are nurses, so, I've thought about being a nurse. When I made the **HITS AND MISSES STRIP** for that in the ASVAB workbook, it looked pretty good — except, of course, it didn't have anything to do with the arts. I'm really not good enough to be a professional dancer or an artist, but I like those things a lot. But, I guess there is no way to combine helping people and working in the arts. Nurses just don't do artistic stuff like dancing or ceramics.

Counselor: Well, things are different nowadays and you shouldn't limit your thinking to occupations that now have many women in them. Besides, there are many other health occupations where people use dance or ceramics or other artistic activities to help people get better.

Traci: What? What? That's for me!

Counselor: One possibility is becoming a recreational therapist. That job isn't listed on OCCU-FIND, but I can help you can find out about it from the material in our occupational information library.

Another possibility is occupational therapist. See, here it is on OCCU-FIND. You had five stars on that, so it looks like a good occupation for you to explore. Why don't you get out the *Occupational Outlook Handbook* and the *Military Career Guide* and read about occupational therapists and occupational therapy specialists? When you finish that, come back and we will talk about these occupations. If they interest you, we can talk about the kinds of college courses you should take to prepare for them.

You may want to read about some of the other related health occupations, too, like physical therapist. Let's go out to the occupational information library to be sure you know how to get started. And let's make another appointment for us to talk some more after you've read about these occupations.

Do you feel less confused about ASVAB now?

Traci: Yes. I think that I wasn't really as confused about the test and the workbook as I was confused about me. I like the idea of a job where I can help people and still do something in the arts.

Perhaps I ought to read about being an interior designer, too. That kind of work helps people, but in a different way than helping people who are sick.

Counselor: Good. You have lots of options to explore.

Notes on the Interview

Because Traci had indicated that she was confused about her ASVAB scores, the counselor gave primary attention to resolving this confusion. It soon became apparent, however, that Traci's confusion was about planning for college. The counselor helped Traci understand that the ASVAB scores can be used not only to predict potential to do college work, but also to make some decisions about the kind of college program a student may take to enter a selected occupation. Some counselors might have preferred to use a less directive approach and would have sent Traci to use a computer-based career information or guidance system to discover occupations that combine her interests in the arts and in helping others. Other counselors might agree that, because Traci was already somewhat confused by her caeer exploration experience with ASVAB, the more direct approach is preferable.

Case #3 – Patty, 12th grade

Background

Patty is an 18-year-old who attends a small, rural high school from which only about 30 percent of the students go on to any form of postsecondary education. She lives with her parents and two younger brothers. Patty has never been a very good student. Her counselor suggested that she take ASVAB to help her make plans about what she will do after she finishes high school. Patty has taken a number of courses in business, but she has barely passed them. She has no career plans at this time and has expressed no particular interest in any one career area.

During the past year, Patty has been working part time at a fast-food restaurant to earn money for her clothes. Patty is satisfied with her restaurant job and reports that she is considered a good employee. (Her employer says she is dependable, punctual, and reliable.) However, Patty says that she would like a job after high school that pays more than the minimum wage and that doesn't require her to work evenings and weekends.

When asked about her interests in a previous session, Patty told the counselor that she likes to play softball, watch TV, spend time with her friends, and build wooden toy chests that she sells at crafts fairs.

Patty is enrolled in a career exploration course. All students in the course took ASVAB and used the workbook as part of their class activities. Patty has requested an individual session to discuss her plans after high school.

ASVAB Scores

	Grade/Sex Percentile	Youth Population Percentile
Academic Ability	19	18
Verbal	24	22
Math	16	17
Mechanical & Crafts	30	18
Business & Clerical	18	20
Electronics & Electrical	17	13
Health, Social, & Technology	18	16

Exploring Careers: The ASVAB Workbook Information

At the beginning of the ASVAB workbook, Patty said she had thought about the occupations of waitress and beautician. When Patty chose her values, she selected leisure as most important; she chose medium income and security as her other values. Patty selected only one interest and skill — working with her hands. She also indicated that she did not want to consider occupations that required more than one year of training after high school.

When she worked with OCCU-FIND, Patty could find no occupation that provided everything she wanted (five Hits). She found six occupations that had four Hits — flight attendant, diesel mechanic, electronic equipment repairer, machinist, plumber, and toolmaker. Patty had told the teacher of the career exploration course that none of these occupations interested her. Patty found that she had three Hits for the occupation of cosmetologist, which she had thought about entering.

Interview

Counselor: . . . then you had a chance to go through the workbook exercises in your career exploration class and to study your results. You say you feel that they didn't help you.

Patty: Yeah. Nothing. It looks like I'm not good at anything. I don't like any of those jobs they talked about, either.

Counselor: You said at the beginning of the ASVAB workbook that you had thought about being a waitress or a beautician. How do you feel about those occupations?

Patty: Being a waitress is OK. But I only make minimum wage and have to depend a lot on my tips. The main problem is that the busiest time — and the time when you can make the most money — is weekends, and I don't want to work then.

Counselor: And what about being a beautician?

Patty: Well, I wouldn't mind working in a beauty parlor. My girl friend goes to a beauty school, and she says I'm as good at doing hair and makeup as she is. The problem is that I just can't get very excited about doing hair forever.

Counselor: Then let's talk about the *real* you. What do you like to do? What are you good at doing? What do you want to do?

Patty: I'm not good at school work. And I'm not good at anything this test tested. But there is something I'm good at and like.

Counselor: Would you share that with me?

Patty: Well, I'm good at building things. I can make good toy boxes. People like and want to buy them. I work on them at home in my spare time. That's why I said leisure was important for me — I need leisure time to make these things. I usually have several orders. And when I go to crafts shows with them, I almost always sell all I take and get extra orders as well.

Counselor: That's great! You know, you might want to explore carpentry or furniture making as a career. And if you keep building this business of yours, you might even be able to make a career out of it.

Patty: I never thought about that — it's always seemed more like fun than work. But I'm not sure I want to be a carpenter.

Counselor: Why is that?

Patty: Well, I've never seen a woman doing that kind of work. And it means that you have to work outdoors when the weather is pretty uncomfortable. I'd rather work inside.

Counselor: There are lots of women doing carpentry and other kinds of building and construction work these days. I'll give you some things to read about women doing this kind of work.

And as for working outdoors, there are lots of specialities in construction carpentry. You can specialize in doing interior detail work, like making paneling or trim. Or you could think of becoming a maintenance carpenter, instead of a construction carpenter. That would mean that you would help keep buildings in good repair, by putting in new windows, or fixing things that have worn out or broken.

Patty: I think I'd like that. It sounds more secure than construction work. My dad does construction stuff. Sometimes everyone wants him to work, but sometimes there isn't any work to be had anywhere.

Counselor: You're right. Maintenance carpentry is more secure than construction carpentry because you usually work for someone rather than working for a general contractor or being an independent contractor yourself.

I can give you some material to read about different specialties in carpentry. Do you know how people get trained for this kind of work?

Patty: No. I always thought that if you were good at building people found out about it and gave you work.

Counselor: That might happen to a lucky few, but most people who become carpenters or do other kinds of building or construction work learn their skills in an apprenticeship program. Do you know what that is?

Patty: Yes, one of the boys I know is going to be apprenticed to a plumber. He told me that he will work with him while he learns how to do the job. And he will get paid too. He said that the plumber told him he might learn better and faster if he signed up for a course or two at the county vo-tech school.

Counselor: I'm glad you know something about apprenticeships. We are going to have a group counseling session next week for anyone who is interested in occupations that often require apprenticeships. Why don't you come?

And the plumber is right. It *is* a good idea to take some vocational courses that will help you learn things about your work.

Patty: I've taken some vocational courses — but they were all in business. I liked the typing OK, the bookkeeping was dull — although I did learn a few good things that help me when I filed my income tax report) — and I really hated shorthand.

Counselor: It's too bad that our high school doesn't have more vocational courses. Let's look into what kind of vocational courses are available in building, especially carpentry, at the county vo-tech school. Is that OK with you?

Patty: Yes, but I'm still worried that carpentry isn't a very secure way to make a living.

Counselor: That's right, unless you work in maintenance carpentry or for a furniture company. In the ASVAB workbook, you said that security was an important value for you. Do you still feel that way?

Patty: Yes, I do. But I guess I should change my rating of leisure as important. It is only important if I can't work building things — because I want to have time to make toy chests. But if I could get a job building toy chests and other stuff like that, then I wouldn't care if I never had a vacation.

Counselor: Perhaps you should do the values exercise in your ASVAB workbook again, thinking about what would be important to you if you were doing some kind of work that you like, such as building things. That might make a big difference in how things come out for you on OCCU-FIND. You know, these tests and exercises can only reflect the effort and information you put into them.

Patty: That's a good idea. I really don't care that much about leisure if I am doing the kind of work I like. But I do still want a job that has some security and a good, steady income.

Counselor: Then let's explore some other occupations that involve building but that might be more secure. Have you ever heard the term "cabinetmaker?"

Patty: Yes, that's a guy who makes furniture. I know one who comes to all the craft shows. He said if I ever wanted a job, I should let him know. But my folks think there isn't much security in making and selling stuff at those craft shows, even if I do make pretty good money doing it.

Counselor: Well, that kind of cabinet work may be less secure than some other kinds of work. But you ought to find out for yourself. Why don't you talk to that cabinetmaker and find out from him more about that kind of work, especially whether he thinks security is a problem?

Patty: OK.

Counselor: There are other kinds of cabinetmaker jobs too. For example, you could get a job in a factory where furniture is made. That kind of job would let you do the kind of work you like and would give you a steady salary.

Patty: And there is a furniture factory not very far from here. Perhaps I ought to go and talk with them too.

It sounds as if there are all sorts of things I can do. I feel a lot better. Thanks for talking with me.

Notes on the Interview

Patty is typical of many students who present relatively flat profiles combined with relatively low scores (all scores below the 30th percentile). Such students may have ill-defined values and interests, low grades, and even perceive all aspects of work as aversive. Counselors often deal with this problem by trying, as Patty's counselor has done, to raise the general level of career maturity through career classes. Other approaches might include exploration of realistic entry-level jobs and investigation of training alternatives that are less academic in nature. The counselor works to make sure that students like Patty do not perceive their low test scores and their poor academic history as rejection of themselves as persons; the interview stresses individual dignity and worth. The counselor will help Patty reconsider the sex stereotypes she holds for carpentry work and will also have Patty reconsider the values she selected in the ASVAB workbook. The counselor might have pointed out to Patty that paper-and-pencil tests, like ASVAB, can measure only certain kinds of skills. People like Patty who work well with their hands might benefit from taking other types of tests that would provide the opportunity to demonstrate manipulative skills. The counselor might have remarked to Patty that her ASVAB tests scores and workbook results were primarily a reflection of her low interest in school-related activities and in the occupations she had listed. When Patty started talking about what she really cared about, she emerged as a much more capable and talented individual than these materials indicated.

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7

QUESTIONS AND ANSWERS

1. **Why is counselor participation necessary in ASVAB testing?**

   Counselors are in the best position to know how ASVAB results can be used effectively in their schools and which students will benefit most from ASVAB testing. Counselors know the students and have the training to provide comprehensive test interpretations. Counselors, therefore, can maximize the utility of ASVAB results for students.

   The counselor's presence on the day of testing is an important factor in ensuring that the ASVAB testing process will be a positive experience for students. The participation of school personnel helps to create a familiar atmosphere and enhances the performance of students on the test. In addition, students' questions regarding the school's use of the test results can be readily answered.

2. **Is the ASVAB free of cost to the school and student?**

   Yes. The Department of Defense provides test materials, administration and scoring services, resource personnel, and reference materials at no cost to schools. There are, however, obvious indirect costs. Schools contribute the physical space where testing takes place, the staff time involved in coordinating testing activities and interpreting the results, and the educational time of students who take the test.

3. **If students take the ASVAB in school, can their scores be used if they enlist in the military?**

   Yes. Individuals who have taken the ASVAB in school may use those ASVAB results to enlist if (a) they were 11th or 12th graders or postsecondary students when they took the ASVAB and (b) they took the ASVAB within the last 2 years. Individuals' ASVAB test results greatly influence the training opportunities available to them as enlistees. Therefore, individuals considering enlistment should be advised to take the ASVAB seriously and to put forth their best effort on the test. Under certain conditions it is possible for individuals to retest at the time of enlistment.

4. **Can the ASVAB be given to 9th graders?**

   The ASVAB can be given to 10th graders but not to 9th graders. Nationally representative norms are not available for 9th graders. If a school elects to test 10th graders, these students will be compared to the recently available 10th grade norms. Suitable norms are not available for use with 9th graders.

5. **Can the ASVAB be administered in two or more testing sessions?**

   The ASVAB, like other standardized tests, should be administered uniformly across all situations. If testing cannot be accomplished satisfactorily in one session, the military service representative should be contacted.

6. **How can schools inform the parents of high school students about ASVAB testing in the school?**

   A brochure is available to explain the ASVAB to parents prior to testing. Detachable, postcards are available for distribution to parents after testing. The postcards are part of the ASVAB results package and can be used to inform parents that their daughter or son has taken the ASVAB and that test results have been received by the school. Counselors might want to consider scheduling individual or group sessions with parents to discuss the results.

7. **Is written parental consent required for students taking the ASVAB?**

No. The ASVAB is exempt from those provisions of the Family Educational Rights and Privacy Act of 1974 (known as the Buckley Amendment) that require obtaining a parental release statement. Based on rulings by the General Counsels of both the Department of Defense and the then Department of Health, Education and Welfare, records generated by ASVAB testing do not become records of the school until the results are provided to the schools; consequently, they do not require a parental release statement.

8. **If students are tested in the spring, with which norm group will they be compared?**

Students tested in the spring will be compared to students who took the ASVAB just before entering or upon entering the same grade. For example, an 11th-grade woman taking the ASVAB in March will be compared to women who were entering 11th grade when they took the ASVAB from July to October of 1980.

9. **What is the reading level of the ASVAB?**

Estimates of reading grade level have been computed separately for test questions and directions. For test questions, the percentages of words typically encountered in materials used in various grades were calculated. These grade levels were based on information in the *The Word Frequency Book* (Carroll, Davies, & Richman, 1971). By the sixth grade, 96% of ASVAB test words typically have been encountered. In 8 of 9 subtests with verbal content, the sixth-grade percentages ranged from 95 to 100. The estimate for *Word Knowledge* questions was 83%. More than 98% of the test words have been encountered by the eighth grade, with subtest percentages ranging from 98 to 100, except for *Word Knowledge* (93%).

The reading grade level of ASVAB test directions was estimated using the Dale-Chall formula (Chall, 1958). This procedure yielded a reading level of less than sixth grade. These estimates indicate that examinees in Grades 10 and above should have very little difficulty in understanding the verbal content of the ASVAB.

10. **How does a counselor encourage a student to explore occupational alternatives when the individual already has selected an occupational goal?**

The ASVAB may help confirm whether or not the student's selection is a good match with measured ability. In addition, interest, motivation, and values should be examined. *Exploring Careers: The ASVAB Workbook* is available to aid in this examination. Even when the student's selection seems appropriate, the student should be cautioned that it is not uncommon for people to change their initial career choice. If the selection does not seem appropriate, a counselor should probe to find out why the student has made the choice. The ASVAB may suggest occupations that meet similar needs, or a counselor may need to recommend further testing, self-exploration, and/or exploration of careers.

11. **How can a counselor know if particular occupations are dominated by one sex at the present time?**

    It is difficult for any counselor to keep up-to-date with labor market demographics. Checking with the State Occupational Information Coordinating Committee (SOICC) and publications of the U.S. Department of Labor and Department of Defense will help.

12. **Is there any additional training available for school counselors in interpreting ASVAB test results?**

    A school could offer an in-service program for counselors in the interpretation of the ASVAB. Test Specialists are available to assist in such training activities and could serve as a valuable resource. Educators may receive ASVAB training at workshops or conventions sponsored by professional associations.

The annotated bibliography presented in this chapter has been prepared to assist counselors in locating technical information about the ASVAB and general information about testing, career information, career counseling, and the military services. The bibliography is organized into two sections. The first section describes material concerning the ASVAB and the military services. The second section describes materials dealing, in a generic manner, with testing, career information, and counseling.

It is beyond the scope of this chapter to review the vast body of literature that addresses topics related to ASVAB testing. The general references included in this bibliography were selected as examples of the many useful resources that are commonly available to counselors and educators. The inclusion of these references in this bibliography is not an endorsement of these publications.

8

ANNOTATED BIBLIOGRAPHY

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This publication explains theories of female and adolescent motivation and addresses such issues as multiple roles and role conflict.

Harrington, T. F., & O'Shea, H. J. (Eds.). (1984). *Guide for occupational exploration* (2nd ed.). Circle Pines, MN: American Guidance Service.
The *Guide* was developed by the U.S. Employment Service to provide information on occupational fields and occupational requirements. The *Guide* lists all occupations included in the *Dictionary of Occupational Titles (DOT)*, fourth edition, except those specifically related to the military. Occupational titles are organized according to interest areas, work groups, and subgroups. Descriptive information is provided for each work group to assist the reader in reviewing, understanding, and evaluating interests, abilities, and military work experience and relating them to pertinent fields of work.

Herr, E. L., & Cramer, S. H. (1988). *Career guidance and counseling through the life span: Systematic approaches.* New York: Scott Foresman.
This text emphasizes a developmental approach to career guidance. Materials and techniques to help counselors put theories to work are identified. One chapter focuses on assessment in career guidance.

Johnson, C. (Ed.). (1983). *Microcomputers and the school counselor.* Alexandria, VA: American School Counselor Association, A Division of the American Association for Counseling and Development.
This book is designed to introduce school counselors to the use of computers as aids in career counseling. Topics ranging from selecting hardware and software to ethical considerations are discussed in nontechnical language.

Kapes, J. K., & Mastie, M. M. (Eds.). (1982). *A counselor's guide to vocational guidance instruments.* Alexandria, VA: National Vocational Guidance Association. A Division of the American Association for Counseling and Development.

This handbook is designed to aid practitioners in the selection of appropriate instruments for use in vocational guidance settings. Descriptions and reviews of 40 instruments are presented. Multiple aptitude batteries, interest inventories, and career development inventories are among the instruments discussed. Brief descriptions of more than 70 additional tests and inventories are presented as well. References and the American Association for Counseling and Development's policy statement on the responsibilities of users of standardized tests also are included.

Mehrens, W. A., & Lehmann, I. J. (1984). *Measurement and evaluation in education and psychology* (3rd ed.). New York: Holt, Rinehart and Winston.

This textbook is written for introductory courses in measurement and evaluation. The relationship between information gathering and educational decision making is stressed and basic principles of measurement are presented. Both standardized and classroom testing are covered.

Mitchell, A. M. (1978). *Career development needs of 17 year olds: How to improve career development programs.* Alexandria, VA: National Vocational Guidance Association and the Association for Measurement and Evaluation in Guidance, Divisions of the American Association for Counseling and Development.

The National Assessment of Educational Progress (NAEP) Career and Occupational Development (COD) assessment was administered during the 1973-74 school year to a national sample representing four age levels: 9 year olds, 13 year olds, 17 year olds, and adults. This publication provides an overview of the NAEP-COD results for 17 year olds and is intended to provide a summary of the COD results, which will help educators gain a better understanding of the current status of 17 year olds on specific career and occupational development objectives. In addition, the monograph draws implications of the COD results for career development programs and suggests types of learning experiences that might facilitate increased achievement on specific objectives.

National Occupational Information Coordinating Committee. (1986). *Improved career decision making through labor market information* (6th ed.). Washington, DC: Author.

Improved Career Decision Making (ICDM) is a training program designed for dissemination through workshops at the state level. *ICDM* provides counselors labor market and career information for use in counseling. The Employment and Training Administration of the U.S. Department of Labor and the National Occupational Information Coordinating Committee administer and coordinate the program. Training is conducted by individual states. Unit 9 focuses on competencies related to military careers and training programs.

Smith, C. K., Smith, W. S., Stroup, K. M., & Ballard, B.W. (1982). *Broadening career options for women.* Ann Arbor, MI: ERIC

Counseling and Personnel Services Clearinghouse.
This monograph addresses nontraditional career planning for women, changing female employment patterns, and strategies for counseling women about nontraditional careers. Resources concerning women and nontraditional careers also are listed.

U.S. Department of Commerce. (1980). *Standard occupational classification (SOC) manual.* Washington, DC: U.S. Government Printing Office. (GPO No. 003-005-00187-5)
Since 1977, the SOC has been the national government's occupational classification system. The *SOC Manual* presents this classification system and relates SOC groupings to the *Dictionary of Occupational Titles (DOT)* codes. The system is designed to maximize the utility of information collected by government agencies, professional and labor organizations, and private research institutes.

U.S. Department of Defense. (1987). *Exploring Careers: The ASVAB Workbook.* North Chicago, IL: U.S Military Entrance Processing Command.
The *Workbook* is for use by students to help them use information about their abilities, interests, motivation and values for the purpose of career exploration.

U.S. Department of Labor. (1977). *Dictionary of occupational titles (DOT)* (4th ed.). Washington, DC: U.S. Government Printing Office. (GPO No. 029-013-0079-9)
The *DOT* provides job titles, descriptions, and related information for 20,000 civilian and military occupations. The *Dictionary of Occupational Titles, Fourth Edition Supplement, 1982* (GPO No. 029-014-00208-9) contains titles, codes, and definitions for occupations that have emerged since the 1977 publication.

U.S. Department of Labor. (1979). *Exploring careers.* Washington, DC: U.S. Government Printing Office. (GPO No. 029-001-02224-7)
Exploring Careers is a career education resource designed primarily for junior high students. General information about the world of work is presented. Case studies are included to describe specific occupations and to emphasize the importance of affective factors in choosing a career. *Exploring Careers* is available either as a single volume of 15 chapters or as separate chapters.

U.S. Department of Labor. (1980). *A counselor's guide to occupational information.* Washington, DC: Bureau of Labor Statistics. (Bulletin No. 2042)
This publication describes occupational guidance materials available from federal government agencies.

U.S. Department of Labor. (1986-87). *Occupational outlook handbook* Washington, DC: U.S. Government Printing Office. (GPO No. 029-001-02863-6, paper; 029-001-02864-4, hard cover)
The *Handbook* is written to help young people, planners of educational programs, and counselors keep abreast of current occupational employment developments. The *Handbook* is written in nontechnical language and contains articles on new occupations, training opportunities, salary

trends, career counseling, and new Bureau of Labor Statistics studies. It covers approximately 1,250 occupations, grouped according to the *Standard Occupational Classification Manual*, 1980 edition. The *Handbook* contains reference codes to the *Dictionary of Occupational Titles (DOT)*, fourth edition.

U.S. Department of Labor. *Occupational outlook quarterly*. Washington, DC: Bureau of Labor Statistics.
Designed as a companion publication for use with the *Occupational Outlook Handbook*, this periodical provides updated occupational information and reports major trends in the job market.

Webb, W. E. (1984). *Status of statewide career information delivery systems, May 1984*. Washington, DC: National Occupational Information Coordinating Committee.
This document reports the status of career information delivery systems (CIDS) in 42 states and in the District of Columbia, Puerto Rico, and American Samoa. Information such as the location of the CIDS, the operating agency, delivery modes, user services, and financing is included. An appendix is included which lists, by state, the name, telephone number, and address of a CIDS contact person. Another appendix describes software packages and vendor systems commonly used.

Women's Educational Equity Communications Network. (1978). *Sex bias in testing: A review with policy recommendations*. Princeton, NJ: ERIC Clearinghouse on Tests, Measurement, and Evaluation, Educational Testing Service.
This review addresses sex bias in career interest and aptitude tests. Recommendations to test users are included.

Zunker, V. G. (1982). *Using assessment results in career counseling*. Monterey, CA: Brooks/Cole.
This book contains information regarding the utility of test results in career counseling. Case studies illustrate the use of the ASVAB and other tests in a variety of counseling situations.

Information about ordering government publications (stock numbers, prices, etc.) may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402 or by calling them at 275-2091.

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APPENDICES

A. History of the ASVAB

Forerunners of the ASVAB date back to World War II. During World War II, each military service employed its own tests to screen recruits for eligibility and to classify and assign enlisted personnel. These tests included general measures of intellectual ability and specific aptitude measures that reflected the needs of each service.

The need for a common test for all the military began with the passage of the Selective Service Act in 1948, which mandated the development of a standard screening test for enlistment qualification. The *Army General Classification Test*, then the most widely used of the military instruments, was selected as the model for the new joint-service test. The new test, called the *Armed Forces Qualification Test* (AFQT), became operational in 1950.

Each service continued to administer a battery of aptitude tests for the initial assignment of recruits to technical schools or on-the-job training. These aptitude instruments were continuously evaluated and revised as training procedures and equipment changed.

The Air Force was the first service to test students within the high schools with the introduction of the *Airman Qualifying Examination* (AQE) in 1958. The AQE, an abbreviated version of the test then used by the Air Force to classify enlisted personnel, was designed to help recruiting efforts and to aid students in career exploration and decision making. The AQE was administered at no cost to students or schools. Shortly after the Air Force began using the AQE, the Army and Navy produced brief versions to their classification batteries that were used in high schools.

To prevent costly duplication of effort by the military and the schools, and to encourage equitable selection standards across the services, the Department of Defense, in 1966, directed all services to explore the development of a single, multipurpose military test battery for use in high schools. Objectives for this testing program included the following:

- Names and test scores of all 11th and 12th graders who were tested would be provided to military recruiters.
- An AFQT score could be derived from test scores to determine eligibility for entrance into the military.
- Test results would provide aptitude composite scores associated with success in military training programs for jobs in all services.
- Students would receive academic ability and vocational aptitude scores to assist them in career exploration and decision making.
- Schools would receive a multiple aptitude battery and supporting materials at no cost to schools or students.
- Students' interest in military careers would be stimulated through the test and associated materials.

The *Armed Services Vocational Aptitude Battery* (ASVAB) was designed to accomplish these objectives. ASVAB testing, as a joint military effort, began in 1968. Since that time, ASVAB testing has been well received by high schools throughout the United States. Presently, the ASVAB is given in about 14,000 schools. Approximately 1 million students take the ASVAB each year.

Various forms of the ASVAB have been produced. Some forms of the ASVAB have been used exclusively in schools. Other forms have been used for military qualification, placement, and research. The different forms that have been developed are identified in Table A-1.

Table A-1

ASVAB Forms by Dates Used

Years in Use	School Use	Military Use
1968-73	1	None
1973-76	2	3†
	(4 was never used)	
1976-84	5	6, 7 (until 1980)
1980-84		8, 9, 10††
1984-present	14	11, 12, 13

† The Air Force and Marine Corps were the only services to use Form 3. The Marine Corps used it only in 1975.

††ASVAB-14 is parallel to Forms 8, 9, and 10 as well as to Forms 11, 12, and 13.

B. Sample Test Items

General Science

1. **An eclipse of the sun throws the shadow of the**

   1-A moon on the sun.
   1-B moon on the earth.
   1-C earth on the sun.
   1-D earth on the moon.

2. **Substances which hasten chemical reaction time without themselves undergoing change are called**

   2-A buffers.
   2-B colloids.
   2-C reducers.
   2-D catalysts.

Arithmetic Reasoning

3. **How many 36-passenger busses will it take to carry 144 people?**

   3-A 3
   3-B 4
   3-C 5
   3-D 6

4. **It costs $0.50 per square yard to waterproof canvas. What will it cost to waterproof a canvas truck cover that is 15' x 24'?**

   4-A $ 6.67
   4-B $ 18.00
   4-C $ 20.00
   4-D $180.00

Word Knowledge

5. **The wind is variable today.**

   5-A mild
   5-B steady
   5-C shifting
   5-D chilling

6. **Rudiments most nearly means**

   6-A politics.
   6-B minute details.
   6-C promotion opportunities.
   6-D basic methods and procedures.

Paragraph Comprehension

7. Twenty-five percent of all household burglaries can be attributed to unlocked windows or doors. Crime is the result of opportunity plus desire. To prevent crime, it is each individual's responsibility to

7-A provide the desire.
7-B provide the opportunity.
7-C prevent the desire.
7-D prevent the opportunity.

8. In certain areas water is so scarce that every attempt is made to conserve it. For instance, on one oasis in the Sahara Desert the amount of water necessary for each date palm tree has been carefully determined.

How much water is each tree given?

8-A no water at all
8-B water on alternate days
8-C exactly the amount required
8-D water only if it is healthy

Numerical Operations

9. 3 + 9 =

9-A 3
9-B 6
9-C 12
9-D 13

10. 60 ÷ 15 =

10-A 3
10-B 4
10-C 5
10-D 6

Coding Speed

KEY

bargain	8385	house	2859	owner	6227
chin	8930	knife	7150	point	4703
game	6456	music	1117	sofa	9645
		sunshine	7489		

QUESTIONS **ANSWERS**

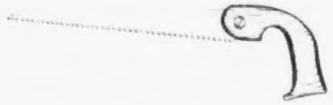
	A	B	C	D	E
11. game	6456	7150	8385	8930	9645
12. knife	1117	6456	7150	7489	8385
13. bargain	2859	6227	7489	8385	9645
14. chin	2859	4703	8385	8930	9645
15. house	1117	2859	6227	7150	7489
16. sofa	7150	7489	8385	8930	9645
17. owner	4703	6227	6456	7150	8930

	A	B	C	D	E
18. music	1117	2859	7489	8385	9645
19. knife	6227	6456	7150	7489	8485
20. sunshine	4703	6227	6456	7489	8930
21. chin	1117	2859	4703	7150	8930
22. sofa	4703	6227	7150	8485	9645
23. bargain	2859	6456	8385	8930	9645
24. point	1117	4703	6227	6456	7150

Auto & Shop Information

25. **A car uses too much oil when which parts are worn?**

25-A pistons
25-B piston rings
25-C main bearings
25-D connecting rods



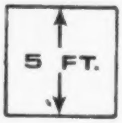
26. **The saw shown above is used mainly to cut**

26-A plywood.
26-B odd-shaped holes in wood.
26-C along the grain of the wood.
26-D across the grain of the wood.

Mathematics Knowledge

27. **If $x + 6 = 7$, then x is equal to**

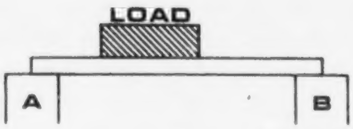
27-A 0
27-B 1
27-C -1
27-D 7/6



28. **What is the area of this square?**

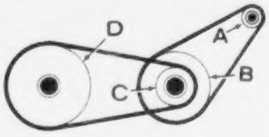
28-A 1 square foot
28-B 5 square feet
28-C 10 square feet
28-D 25 square feet

Mechanical Comprehension



29. **Which post holds up the greater part of the load?**

29-A post A
29-B post B
29-C both equal
20-D not clear



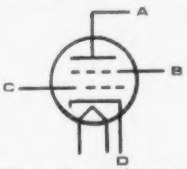
30. **In this arrangement of pulleys, which pulley turns fastest?**

30-A A
30-B B
30-C C
30-D D

Electronics Information

31. **Which of the following has the least resistance?**

31-A wood
31-B iron
31-C rubber
31-D silver



32. **In the schematic vacuum tube illustrated, the cathode is element**

32-A A
32-B B
32-C C
32-D D

Key To The Sample Test Items

1.	B	17.	B
2.	D	18.	A
3.	B	19.	C
4.	C	20.	D
5.	C	21.	E
6.	D	22.	E
7.	D	23.	C
8.	C	24.	B
9.	C	25.	B
10.	B	26.	B
11.	A	27.	B
12.	C	28.	D
13.	D	29.	A
14.	D	30.	A
15.	B	31.	D
16.	E	32.	D

C. The ASVAB and the Military

Different military institutions and resource people are involved in the ASVAB testing process. Counselors may benefit from knowing more about these institutions and resources. For example, it may be helpful to know where students go to enlist, what recruiters do, and who can help counselors interpret ASVAB scores. The purpose of this appendix is to identify key military organizations involved in ASVAB testing and to clarify the roles of military service representatives who are responsible for this process.

Organizations Involved

The military services carry out their duties as part of ASVAB testing in a number of locations outside of the school. The key locations are described below.

Recruiting Stations

The recruiting services establish stations as bases for their recruiters. Many recruiting stations house representatives of more than one service. The recruiters make contacts in high schools and the community at large. At these stations, recruiters conduct preliminary screenings and discuss the military service they represent in general terms with potential enlistees and schedule appointments for applicants with the Military Entrance Processing Stations (MEPS).

USMEPCOM

USMEPCOM is an abbreviation for the United States Military Entrance Processing Command. It is the agency assigned to administer the ASVAB both in the schools and for the services. Personnel at USMEPCOM prepare, publish, and distribute informational and promotional materials about the ASVAB. The address for USMEPCOM is

HQ USMEPCOM/MEPCT
2500 Green Bay Road
North Chicago, IL 60064

MEPS

MEPS is an abbreviation for Military Entrance Processing Station. There are 70 MEPS and one substation located throughout the United States. Individuals wishing to enlist in any of the military services are processed at the MEPS. Applicants take the ASVAB if they have not already taken it in school. They are provided information regarding occupational training areas for which they qualify and the various enlistment options available. While at the MEPS, applicants also receive a medical examination and complete the necessary enlistment forms.

Military personnel who administer the ASVAB in schools are based in the MEPS. (Civilian test administrators are employed by the U.S. Office of Personnel Management and are based in regional offices). In addition, personnel at the MEPS score the ASVAB and distribute the results to schools. The location of the MEPS can be obtained from the local recruiter.

Resource People

Many individuals are involved in the ASVAB test administration process from the time schools are initially contacted through the return and interpretation of students' results. Various resource people are available from the military to aid counselors in the testing process. In general, the local recruiter is the military service representative who is the first point of contact for counselors throughout this process. At times, however, counselors may be in contact with some of the other resource people. Descriptions of the primary resource people related to ASVAB testing are listed below.

Recruiters

Recruiters from each of the military services identify and screen individuals for their service. Recruiters contact prospective enlistees, including those who have been in the service and have returned to civilian life. They advise prospective enlistees about job and career opportunities in their service and perform administrative duties associated with personnel enlistment and reenlistment. As part of their duties, recruiter contact school regarding the ASVAB and make preliminary arrangements for testing. Each service has different qualifications for personnel performing recruiting activities.

Test Specialists

Test specialists are available at all of the 70 MEPS around the country. Test specialists are civilian government employees with training and experience in teaching or counseling. Their duties include marketing the ASVAB and assisting recruiters and school counselors with test interpretation.

Education Specialists

Education specialists are civilian government employees with training and experience as teachers or school counselors. The Army and the Navy have supplemented their recruiting forces with these individuals. They act as liaisons between recruiters and local educators. They communicate with recruiters about various aspects of their area's education community, and they facilitate recruiter activities in the schools. Currently, the Army and the Navy each have more than 50 people working in this capacity. Navy education specialists are assigned to Navy Recruiting Districts. The Army assigns education specialists to Recruiting Battalions. The Air Force and Marine Corps also employ a number of education specialists who work at the headquarters level.

Test Coordinators

Each MEPS has a test coordinator, who coordinates the scheduling of

ASVAB testing in the schools. The test coordinator finalizes scheduled testing dates, determines the availability of test administrators and proctors, and ensures that the ASVAB results are returned to the school.

Test Administrators and Proctors

The ASVAB is administered by qualified test administrators from the Department of Defense or the U.S. Office of Personnel Management. Because results from the ASVAB can be used to qualify individuals for entrance into the military services, test security is important. The test administrators have direct responsibility for the security of the test booklets. School personnel are encouraged to participate as proctors. The MEPS test coordinator can provide advice to school personnel regarding the need for proctors.

Military Counselors at MEPS

Each service has a military counselor at the MEPS who discusses specific programs with young people, helps them to make decisions, and writes the contracts that guarantee job training to applicants. These counselors officially advise applicants about training that will be available, and they determine if an applicant is eligible for a desired training program.

ASVAB Hotline Personnel

There is an ASVAB hotline, staffed by USMEPCOM personnel, for questions that cannot be addressed by the local MEPS test specialist. The toll-free number is 1-(800)-323-0513. In Illinois, counselors can call collect at (312)-688-4922.

D. Descriptive Statistics

Alternate-Form Reliability

An alternate-form reliability coefficient represents the correlation between results on parallel or equivalent forms of a test. The higher the coefficient, the higher the correlation between forms. The parallel ASVAB Forms 8, 9, and 10 (which also are parallel to ASVAB-14) were examined and reliability coefficients calculated for the various composites. Military service applicants took (a) parts of Form 8a and all of Form 9(a or b) or (b) parts of Form 8a and all of Form 10(a or b). The results were combined across test forms. The coefficients for students in Grades 11 and 12 are based on 5,517 service applicants, ages 16-18, who took the ASVAB forms in 1983. The coefficients for the two-year college and Youth Population groups are based on 13,772 service applicants from the full age range of service applicants who took the ASVAB in 1983.

Each service applicant did not take all of the subtests on Form 8a. As a result, data were not available from the same applicants for all of the subtests in two of the ASVAB composites: *Business & Clerical* and *Health, Social, & Technology*. The reliability coefficients for these two composites were calculated based on the formula in Wherry and Gaylord (1943), using data available on the subtest reliabilities and the intercorrelation of the subtests.

The coefficients are Pearson product-moment correlations that have been adjusted according to the standard deviation for each subsample of the Reference Population, which took Form 8a in 1980. (Subsample *n*s are presented in Table D-1.) This adjustment, based on the formula in Gulliksen (1950, p. 111), allows service applicant groups to be used to estimate reliabilities for other populations. Alternate-form reliability coefficients are presented in Table D-2.

Table D-1

Distribution of ASVAB Norm Groups by Sex

Norm Group	*n* in Norm Group		Percent of Norm Group (Weighted)
	Unweighted	Weighted	
Grade 11			
Men	680	2,133,110	51
Women	624	2,035,400	49
Total	1,304	4,168,510	100
Grade 12			
Men	642	1,814,130	51
Women	611	1,726,570	49
Total	1,253	3,540,700	100
Two-Year College			
Men	305	982,000	44
Women	437	1,259,000	56
Total	742	2,241,000	100
Youth Population			
Men	4,550	12,891,200	51
Women	4,623	12,517,900	49
Total	9,173	25,409,100	100

Note. In the national population of 16-23 year olds, 51% are men and 49% are women (U.S. Bureau of the Census, 1979).

Internal Consistency

Internal-consistency coefficients represent the degree of relationship among test items. The higher the internal consistency of a composite, the more homogeneous are the test items that comprise that composite. The internal-consistency coefficients for the ASVAB composites are based on the Kuder-Richardson Formula 20 (K-R 20 for estimating reliability. (The K-R 20 is not appropriate for use with speeded tests. Therefore, an alternate-form coefficient was used for *Coding Speed*, which is found in the *Business & Clerical* composite. This composite is the only one that includes a speeded subtest.) Data came from the subsamples of the Reference Population, which took Form 8a in 1980. (Subsample *ns* are presented in Table D-1.) Internal-consistency coefficients are presented in Table D-3.

Table D-2

Alternate-Form Reliability Coefficients for ASVAB-8, -9, and -10

Men

Composite	Grade 11	Grade 12	Two-Year College	Youth Population†
Academic Ability	.94	.93	.88	
Verbal	.94	.93	.89	
Math	.93	.93	.92	
Mechanical & Crafts	.92	.92	.91	
Business & Clerical	.94	.93	.90	
Electronics & Electrical	.94	.93	.92	
Health, Social, & Technology	.95	.94	.92	

Women

Composite	Grade 11	Grade 12	Two-Year College	Youth Population†
Academic Ability	.92	.93	.88	
Verbal	.93	.93	.89	
Math	.91	.91	.90	
Mechanical & Crafts	.84	.86	.88	
Business & Clerical	.93	.92	.90	
Electronics & Electrical	.91	.92	.90	
Health, Social, & Technology	.92	.92	.90	

Combined

Composite	Grade 11	Grade 12	Two-Year College	Youth Population
Academic Ability	.93	.93	.88	.94
Verbal	.93	.93	.89	.94
Math	.92	.92	.92	.94
Mechanical & Crafts	.89	.90	.92	.93
Business & Clerical	.94	.93	.90	.94
Electronics & Electrical	.93	.93	.92	.94
Health, Social, & Technology	.94	.93	.93	.95

†Not applicable

Table D-3

Internal-Consistency Coefficients

Men

Composite	Grade 11	Grade 12	Two-Year College	Youth Population†
Academic Ability	.95	.94	.91	
Verbal	.95	.94	.91	
Math	.95	.94	.93	
Mechanical & Crafts	.94	.94	.93	
Business & Clerical	.95	.94	.91	
Electronics & Electrical	.95	.95	.94	
Health, Social, & Technology	.95	.95	.93	

Women

Composite	Grade 11	Grade 12	Two-Year College	Youth Population†
Academic Ability	.93	.94	.92	
Verbal	.93	.93	.89	
Math	.93	.93	.92	
Mechanical & Crafts	.87	.89	.89	
Business & Clerical	.93	.93	.94	
Electronics & Electrical	.92	.93	.92	
Health, Social, & Technology	.93	.93	.92	

Combined

Composite	Grade 11	Grade 12	Two-Year College	Youth Population
Academic Ability	.94	.94	.92	.95
Verbal	.94	.94	.90	.95
Math	.94	.94	.93	.95
Mechanical & Crafts	.91	.92	.92	.93
Business & Clerical	.94	.94	.92	.95
Electronics & Electrical	.94	.95	.94	.96
Health, Social, & Technology	.94	.94	.93	.95

†Not applicable

Standard Error of Measurement

The standard error of measurement *(SEM)* represents the reasonable limits of an individual's true score given a specific obtained score. In 68% of the cases, the obtained score would not differ from the true score by more than 1 *SEM* due to errors of measurement. The *SEM* is the basis for the confidence bands on the students' results sheets. The confidence band represents an individual's composite score plus or minus 1 *SEM*, and hence should include the individual's true score in 68% of the cases.

For example:

> An 11th-grade man receives a standard score of 57 on the *Verbal* composite. The *SEM* for 11th-grade men on the *Verbal* composite is 2.5 standard score units. With information obtained in the standard score-to-percentile conversion tables in the *Technical Supplement to the Counselor's Manual for ASVAB-14 (1984)*, the individual's confidence band can be constructed.
>
> | | Standard Score Units | Percentile Score |
> |---|---|---|
> | *Verbal Score* | 57 | 84 |
> | +1 *SEM* | 59.5 | 93 |
> | −1 *SEM* | 54.5 | 76 |
>
> The confidence band for this individual's *Verbal* score would extend from the 76th percentile to the 93rd percentile. The chances are approximately 2 to 1 that the individual's true score falls in that range.

The *SEM* is related to the reliability of the test. The more reliable the test, the smaller the *SEM*, and consequently, the more precisely the test is measuring what it is designed to measure. The *SEM*, as the basis for confidence bands, provides more information for interpreting individual scores within a test than the reliability-coefficient does. The *SEM* for the ASVAB composites are based on the alternate-form reliabilities presented in Table D-2, using the following formula:

$$SEM = s\sqrt{1-r_{xx}}$$

where s is the standard deviation of scores and r_{xx} is the reliability.

SEM are presented in Table D-4 in standard score units. No grade differences were found at the first decimal place for Grades 11 and 12; therefore, the two grades are combined in the table.

Table D-4

Standard Errors of Measurement

Men

Composite	Grades 11-12	Two-Year College	Youth Population†
Academic Ability	2.4	2.7	
Verbal	2.5	2.4	
Math	2.6	2.5	
Mechanical & Crafts	2.6	2.6	
Business & Clerical	2.4	2.4	
Electronics & Electrical	2.4	2.4	
Health, Social, & Technology	2.3	2.3	

Women

Composite	Grades 11-12	Two-Year College	Youth Population†
Academic Ability	2.4	2.7	
Verbal	2.4	2.4	
Math	2.7	2.7	
Mechanical & Crafts	2.8	2.5	
Business & Clerical	2.5	2.4	
Electronics & Electrical	2.5	2.5	
Health, Social, & Technology	2.5	2.3	

Combined

Composite	Grades 11-12	Two-Year College	Youth Population
Academic Ability	2.4	2.7	2.7
Verbal	2.4	2.4	2.4
Math	2.7	2.5	2.5
Mechanical & Crafts	2.9	2.7	2.7
Business & Clerical	2.3	2.4	2.4
Electronics & Electrical	2.5	2.4	2.5
Health, Social, & Technology	2.3	2.2	2.2

Note. Standard errors of measurement are in standard score units.

†Not applicable

Intercorrelations of Composites

The intercorrelations of composites are based on the subsamples of the Reference Population, which took Form 8a in 1980. (Subsample *ns* are presented in Table D-1.) There is overlap in the subtest content of the different composites, especially among the *occupational composites*. This overlap results in relatively high intercorrelations of these composites. The intercorrelations for the various subsamples are presented in Tables D-5 through D-7. The Grades 11 and 12 subsamples are treated as one group in Table D-5.

Table D-5

Intercorrelation of Composites for Grades 11-12

Men

Composite	AA	Verbal	Math	MC	BC	EE
Verbal	.93					
Math	.92	.78				
Mechanical & Crafts	.87	.83	.80			
Business & Clerical	.91	.88	.89	.78		
Electronics & Electrical	.94	.90	.93	.92	.89	
Health, Social, & Technology	.97	.91	.89	.94	[illegible]	.94

Women

Composite	AA	Verbal	Math	MC	BC	EE
Verbal	.92					
Math	.92	.76				
Mechanical & Crafts	.89	.81	.85			
Business & Clerical	.89	.86	.87	.79		
Electronics & Electrical	.93	.88	.94	.92	.88	
Health, Social, & Technology	.97	.89	.90	.94	.87	.92

Combined

Composite	AA	Verbal	Math	MC	BC	EE
Verbal	.93					
Math	.92	.77				
Mechanical & Crafts	.82	.77	.78			
Business & Clerical	.89	.86	.87	.68		
Electronics & Electrical	.92	.88	.93	.90	.85	
Health, Social, & Technology	.96	.90	.89	.92	.84	.93

Table D-6

Intercorrelation of Composites for the Two-Year College Group

Men

Composite	AA	Verbal	Math	MC	BC	EE
Verbal	.88					
Math	.91	.73				
Mechanical & Crafts	.82	.73	.79			
Business & Clerical	.86	.80	.88	.70		
Electronics & Electrical	.92	.86	.93	.89	.85	
Health, Social, & Technology	.95	.84	.88	.94	.83	.93

Women

Composite	AA	Verbal	Math	MC	BC	EE
Verbal	.89					
Math	.91	.73				
Mechanical & Crafts	.88	.80	.84			
Business & Clerical	.85	.80	.85	.78		
Electronics & Electrical	.92	.87	.93	.91	.85	
Health, Social, & Technology	.95	.86	.89	.94	.83	.91

Combined

Composite	AA	Verbal	Math	MC	BC	EE
Verbal	.89					
Math	.91	.74				
Mechanical & Crafts	.81	.72	.79			
Business & Clerical	.85	.79	.85	.64		
Electronics & Electrical	.91	.85	.93	.90	.81	
Health, Social, & Technology	.94	.84	.89	.93	.79	.93

Table D-7

Intercorrelation of Composites for the Youth Population

Composite	AA	Verbal	Math	MC	BC	EE
Verbal	.93					
Math	.91	.78				
Mechanical & Crafts	.82	.78	.79			
Business & Clerical	.91	.88	.87	.71		
Electronics & Electrical	.92	.88	.93	.91	.86	
Health, Social, & Technology	.96	.90	.89	.93	.86	.94

E. Military Career Guide

The *Military Career Guide: Employment and Training Opportunities in the Military* is a Department of Defense publication designed as a career counseling resource for students, parents, and counselors. It provides narrative descriptions of duties, work environments, training provided, and other characteristics for 205 military occupations.

The description of each occupation in the *Military Career Guide* contains information about comparable military occupational specialties from the Army, Navy, Air Force, Marine Corps, and Coast Guard. Because some specialties are not found in all of the services, not all services are represented in each occupation. The descriptions are necessarily general in nature. The *Military Career Guide* is intended to be an exploratory resource that covers the full range of occupations across all services. More detailed information about the nature and availability of a military occupational specialty in a particular service can be obtained from that service's education specialists or recruiters.

Contents of the Military Career Guide

Each of the occupational descriptions in the *Military Career Guide* contains 11 sections that characterize the numerous military occupational specialties represented by that occupation. The occupations have been organized in clusters similar to the *Occupational Outlook Handbook*, published by the U.S. Department of Labor. Table E-1 provides a brief explanation and example for each of the sections.

Table E-1

Contents of the Military Career Guide

Section	Example
1. Title	
Occupational descriptions in the *Military Career Guide* combine specialties available in some or all of the five services. Titles chosen for the occupations reflect this grouping and do not necessarily correspond to titles used by each service.	Heating and cooling mechanics
2. Services Represented	
This section lists the services with specialities in the occupation. Not all services are represented in every occupation.	Army, Air Force, Navy, Marine Corps, Coast Guard.

3. Background and Summary	
This section describes the significance of the products or results of the work performed in the occupation. It provides a perspective about the context in which the work is performed. Typically, the last sentence in this narrative summarizes the main function(s) of the occupation.	Air conditioning and heating equipment is used to maintain comfortable temperatures in military buildings, airplanes, and ships. Refrigeration equipment is used to keep food cold and to keep some missile fuels at sub-zero storage temperatures. Heating and cooling mechanics install and repair air conditioning, refrigeration, and heating equipment.
4. What They Do	
This section lists representative tasks performed by workers in particular specialties represented by the occupation.	Heating and cooling mechanics in the military perform some or all of the following duties: read and follow blueprints, circuit diagrams, and written instructions; install and repair heating plants such as furnaces and boilers; re-charge cooling systems with freon or other gases; install copper tubing systems that circulate water or cooling gases; install air ducts and floor vents; replace compressor parts on refrigerator units such as valves, pistons, bearings, and electrical motors; repair thermostats and electrical circuits.
5. Physical Demands	
This paragraph describes physical requirements such as special vision, hearing, and lifting requirements.	Heating and cooling mechanics may have to lift or move heavy equipment.
6. Special Qualifications	
This section describes special qualifications such as gender, typing skills, and high school courses completed.	(This section is not applicable to every occupational cluster.)

7. Helpful Attributes

Certain knowledge and skills are helpful in performing certain occupations. The school subjects and attributes listed in this section should be considered as helpful or desirable, and not required.

Helpful school subjects include science, math, and shop. Helpful attributes include: skill in using hand and power tools; interest in working on machines; interest in solving problems.

8. Work Environment

This section briefly outlines the predominant work environments. Some occupations are performed outdoors, some indoors, some on ships, and some in airplanes.

Heating and cooling mechanics may work inside repair shops. Frequently, they work wherever equipment is to be installed or repaired, sometimes in cramped spaces.

9. Training Provided

This section describes the training provided to workers entering particular military occupations. It typically includes a range for the length of training in order to account for the different specialties represented by the occupation. The major training subjects also are listed. When applicable, the last sentence notes the existence of certified apprenticeship programs. Military occupational training may prepare workers for civilian occupations requiring similar skills.

Job training consists of between 8 and 22 weeks of classroom instruction and practice in repair work. Training length varies depending on specialty. Course content typically includes: refrigeration theory; installation and repair of refrigeration and air conditioning units; installation and repair of furnaces and boilers; use of diagrams and blueprints; repair of electrical parts and circuits. Additional training is available on the job and in advanced training courses. The Army and Marine Corps offer certified apprenticeship programs in this occupation.

10. Civilian Counterparts

Almost all military specialties have one or more civilian counterparts. This section lists the kinds of organizations that typically employ civilians in similar occupations. It also highlights differences between military and civilian work when applicable, and lists common civilian titles corresponding to the military occupation. Military occupational specialties were linked to civilian occupations defined by the *Dictionary of Occupational Titles (DOT)* through extensive task analysis. When the tasks performed in the military are comparable to those of a *DOT* code and vice versa, those jobs were considered counterparts.

Civilian heating and cooling mechanics work for contractors that install home furnaces and air conditioners. They also work for firms that repair refrigerators and freezers in homes, grocery stores, factories, and warehouses. Heating and cooling mechanics in civilian life often specialize by type of equipment. They may be called heating, air conditioning, refrigeration, or climate control mechanics.

11. Opportunities

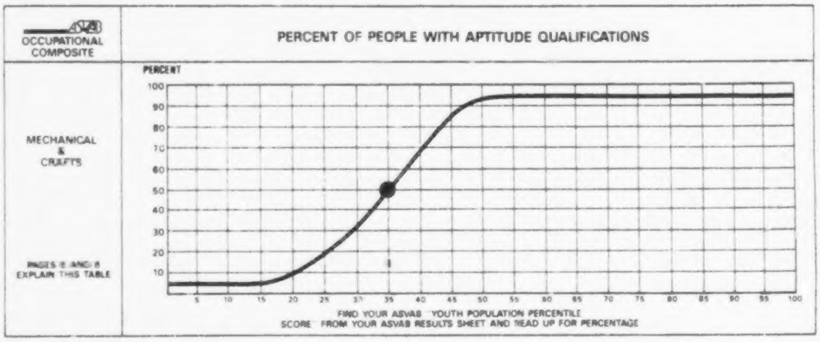
Personnel figures are based on historical data. The figures should be considered approximations, as work force needs are subject to change. Every military occupation has a defined career path. A general approximation of each occupation's career path is presented.

There are about 5,000 heating and cooling mechanics in the military. The services need about 800 new mechanics each year. After job training, heating and cooling mechanics maintain and repair equipment under supervision. With experience, they may learn to diagnose mechanical problems, and perform complicated repairs. and supervise others. Eventually, they may become maintenance or utilities superintendents.

12. ASVAB

For each enlisted occupation, a chart is presented that permits translation of a student's ASVAB-14 score into a probability that represents the student's chances of qualifying for at least one military specialty in the occupation.

SAMPLE ASVAB TABLE
FOR MILITARY CAREER GUIDE



How to Find Occupations in the Military Career Guide

Particular occupations in the *Military Career Guide* can be located through the table of contents and four indexes. Summary explanations of each of these are as follows:

1. Table of Contents

The table of contents provides a listing of 205 occupational titles, organized into broader clusters that parallel clusters in the *Occupational Outlook Handbook*. An example from the table of contents is provided below for the Construction group.

CLUSTER:	**Construction Occupations**	**Page Number**
OCCUPATION:	Blasting Specialists	155
	Bricklayers and Concrete Masons	156
	Building Electricians	157
	Carpenters	158
	Ironworkers	159
	Paving Equipment Operators	160
	Plumbers and Pipe Fitters	161
	Well Drillers	162

The cluster headings can be used as the basis for selecting a general area of work to explore or can be used to locate a particular occupation, such as carpenters.

2. DOT Code Index (by DOT Number)

This index lists civilian counterparts to the 205 military occupations described in the *Military Career Guide*. The civilian occupations are listed in numerical order by their *Dictionary of Occupational Titles* (DOT) codes. This index is useful when you know a DOT code and want to find out whether it has a military counterpart.

DOT Code	**DOT Title**	**Page Number**
005.061-014	CIVIL ENGINEER	298
005.061-030	SANITARY ENGINEER	298
005.281-010	DRAFTER, CIVIL	81
005.281-014	DRAFTER, STRUCTURAL	81
011.261-018	NON-DESTRUCTIVE TESTER	88
011.281-014	SPECTROSCOPIST	84
012.061-014	SAFETY ENGINEER	302
012.067-010	METROLOGIST	302
012.167-026	FIRE-PROTECTION ENGINEER	302
012.167-030	INDUSTRIAL ENGINEER	302

3. DOT Code Index (by Occupation)

This index lists civilian counterparts to the 205 military occupations described in the *Military Career Guide*. Below each military occupation, the counterpart civilian occupations are listed according to their *Dictionary of Occupational Titles* (DOT) codes.

CLUSTER:	**ELECTRONIC AND ELECTRICAL EQUIPMENT REPAIR OCCUPATIONS**	**Page Number**
OCCUPATION:	**AIRCRAFT ELECTRICIANS**	**139**
DOT CODE:	825.281-018 ELECTRICIAN, AIRPLANE	
OCCUPATION:	**DATA PROCESSING EQUIPMENT REPAIRERS**	**140**
DOT CODE:	823.281-010 AVIONICS TECHNICIAN	
	828.281-010 ELECTRONICS MECHANIC	
OCCUPATION:	**ELECTRICAL PRODUCTS REPAIRERS**	**141**
DOT CODE:	721.281-018 ELECTRIC-MOTOR REPAIRER	
	721.484-010 ELECTRIC-MOTOR WINDER	
	724.684-018 ARMATURE WINDER, REPAIR	
	729.281-022 ELECTRIC-TOOL REPAIRER	
	729.281-030 ELECTROMEDICAL-EQUIPMENT REPAIRER	
	829.281-014 ELECTRICAL REPAIRER	
OCCUPATION:	**ELECTRONIC INSTRUMENT REPAIRERS**	**142**
DOT CODE:	719.261-010 BIOMEDICAL EQUIPMENT TECHNICIAN	
	719.261-014 RADIOLOGICAL-EQUIPMENT SPECIALIST	
	720.281-018 TELEVISION-AND-RADIO REPAIRER	
	729.281-010 AUDIO-VIDEO REPAIRER	
	823.281-010 AVIONICS TECHNICIAN	
	828.281.010 ELECTRONICS MECHANIC	
	829.261-014 DENTAL-EQUIPMENT INSTALLER AND SERVICER	
	829.281-022 SOUND TECHNICIAN	

4. ASVAB Index

This index groups the 134 military enlisted occupations described in the *Military Career Guide* under the four ASVAB Occupational Scores: (1) Mechanical and Crafts; (2) Business and Clerical; (3) Electronics and Electrical; and (4) Health, Social, and Technology.

This ASVAB Index is a convenient reference for locating the page numbers of all the enlisted occupations that relate to a particular ASVAB Occupational Score. For example, a person whose highest ASVAB Occupational Score is in Electronics and Electrical may quickly locate the page numbers of all military enlisted occupations that fall under the Electronics and Electrical Occupational Composite Scores.

ELECTRONICS AND ELECTRICAL	**Page Number**
AIRCRAFT ELECTRICIANS	139
BUILDING ELECTRICIANS	157
DATA PROCESSING EQUIPMENT REPAIRERS	140
ELECTRICAL PRODUCTS REPAIRERS	141
ELECTRONIC INSTRUMENT REPAIRERS	142
ELECTRONIC WEAPONS SYSTEMS REPAIRERS	143
FLIGHT ENGINEERS	186
LINE INSTALLERS AND REPAIRERS	144

5. Title Index

This index is an alphabetical listing of occupational titles that represent military occupations described in the *Military Career Guide*. The titles in capital letters and bold print are the main titles of the 205 military occupations described in this book. The remainder of the titles are alternate names for these occupations or specialties within them. The alternate titles were drawn from several sources including: (1) *Dictionary of Occupational Titles* occupations; (2) titles found in civilian career information resources, such as the *Occupational Outlook Handbook* and computerized career information delivery systems (CIDS); and (3) commonly used job titles.

A	**Page Number**
Able Seamen	189
ACCOUNTANTS AND AUDITORS	247
Accounting Clerks	97
ACCOUNTING SPECIALISTS	97
Acetylene Plant Operators	167
Administrative Assistants	98
ADMINISTRATIVE SUPPORT SPECIALISTS	98
Admitting Clerks	64
Adult and Vocational Education Teachers	264

The materials that follow are provided as resources for the student or counselor to use with the ASVAB. Most of these materials are written for students, but some are appropriate for use by counselors, teachers, and/or parents. These materials are suggested counseling aids that may be appropriate for use in different schools. A counselor can elect to use any or all of these materials. These materials may be used as handouts or overhead transparencies; they can also be modified to meet the needs of individual students.

HANDOUTS

Handout I

Using the Military Career Guide

WHAT IS THE *MILITARY CAREER GUIDE?*

The *Military Career Guide* was designed to be used by students and parents for career exploration purposes. The *Military Career Guide* describes occupations available in the Army, Navy, Air Force, Marine Corps, and Coast Guard. The book may be useful in exploring occupations even if you are not sure you want to enlist in the military. The *Military Career Guide* provides a description of 205 military occupations. General information is provided on subjects, such as enlistment requirements, military life, and training opportunities. There is an introductory section for each service (Army, Navy, Air Force, Marine Corps, and Coast Guard) that details enlistment, training, advancement, and educational programs.

WHAT CAN I LEARN ABOUT DIFFERENT OCCUPATIONS IN THE MILITARY FROM THE *MILITARY CAREER GUIDE?*

There are many different occupational specialties that are filled by persons in the military services. The *Military Career Guide* organizes these specialties into 134 enlisted and 71 officer occupations. For each of these occupations the following information is provided:

Military Occupational Information

- Work performed
- Work environment
- Physical demands
- Restrictions based on sex
- Special qualification requirements
- Services offering the occupation
- Occupational outlook information

Military Training Information

- Length of training
- Summary of training content
- Indication of any services offering a Department of Labor-certified apprenticeship program

Civilian Information

- Representative civilian occupational counterparts

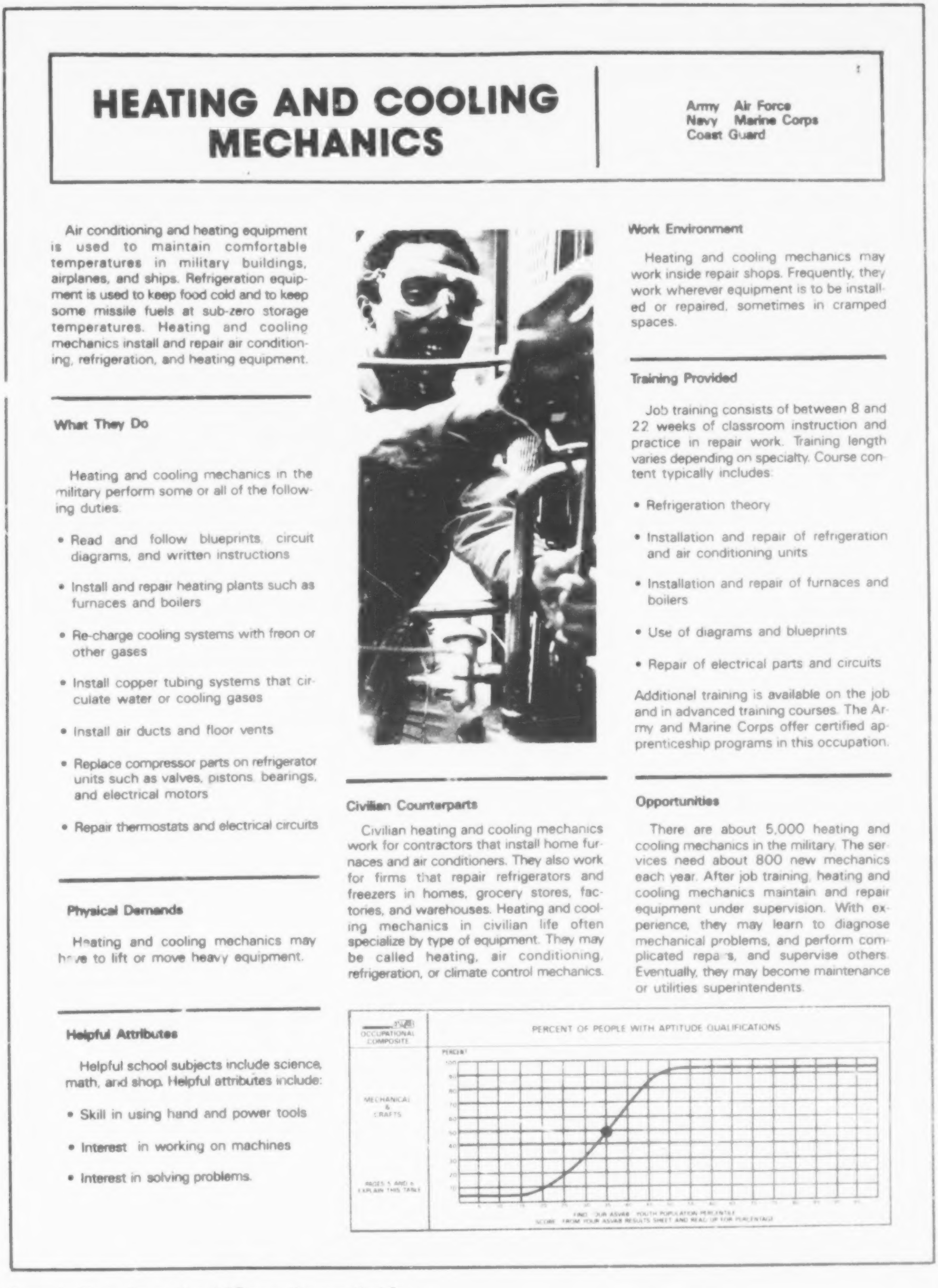
HOW CAN I USE MY ASVAB RESULTS WITH THE *MILITARY CAREER GUIDE?*

Special ASVAB scores entitled "Youth Population Percentile Scores" are listed on your

ASVAB Results Sheet. They are provided to you for use with the *Military Career Guide.* For each of the enlisted occupations discussed in the *Military Career Guide,* there is a probability chart that can help you use your "Youth Population Percentile Scores" to estimate your chances of qualifying for at least one military specialty within that occupation in the military. The *Military Career Guide* contains specific instructions on how to use your ASVAB results for this purpose.

HOW CAN I USE THE *MILITARY GUIDE* WITH OTHER CAREER INFORMATION RESOURCES IN MY SCHOOL?

The book is organized according to the same general categories used in the *Occupational Outlook Handbook.* In addition, there is a *Dictionary of Occupational Titles (DOT)* index in the *Military Career Guide.* This allows you to look up occupations in the military according to *DOT* information, such as worker actions, the purpose of these actions, and machines, tools, equipment, or work aids used. These features make the book also compatible with the *Guide for Occupational Exploration* and several other publications available in the career resource center or library.



HEATING AND COOLING MECHANICS

Army Air Force
Navy Marine Corps
Coast Guard

Air conditioning and heating equipment is used to maintain comfortable temperatures in military buildings, airplanes, and ships. Refrigeration equipment is used to keep food cold and to keep some missile fuels at sub-zero storage temperatures. Heating and cooling mechanics install and repair air conditioning, refrigeration, and heating equipment.

What They Do

Heating and cooling mechanics in the military perform some or all of the following duties:

- Read and follow blueprints, circuit diagrams, and written instructions
- Install and repair heating plants such as furnaces and boilers
- Re-charge cooling systems with freon or other gases
- Install copper tubing systems that circulate water or cooling gases
- Install air ducts and floor vents
- Replace compressor parts on refrigerator units such as valves, pistons, bearings, and electrical motors
- Repair thermostats and electrical circuits

Physical Demands

Heating and cooling mechanics may have to lift or move heavy equipment.

Helpful Attributes

Helpful school subjects include science, math, and shop. Helpful attributes include:

- Skill in using hand and power tools
- Interest in working on machines
- Interest in solving problems.

Civilian Counterparts

Civilian heating and cooling mechanics work for contractors that install home furnaces and air conditioners. They also work for firms that repair refrigerators and freezers in homes, grocery stores, factories, and warehouses. Heating and cooling mechanics in civilian life often specialize by type of equipment. They may be called heating, air conditioning, refrigeration, or climate control mechanics.

Work Environment

Heating and cooling mechanics may work inside repair shops. Frequently, they work wherever equipment is to be installed or repaired, sometimes in cramped spaces.

Training Provided

Job training consists of between 8 and 22 weeks of classroom instruction and practice in repair work. Training length varies depending on specialty. Course content typically includes:

- Refrigeration theory
- Installation and repair of refrigeration and air conditioning units
- Installation and repair of furnaces and boilers
- Use of diagrams and blueprints
- Repair of electrical parts and circuits

Additional training is available on the job and in advanced training courses. The Army and Marine Corps offer certified apprenticeship programs in this occupation.

Opportunities

There are about 5,000 heating and cooling mechanics in the military. The services need about 800 new mechanics each year. After job training, heating and cooling mechanics maintain and repair equipment under supervision. With experience, they may learn to diagnose mechanical problems, and perform complicated repairs, and supervise others. Eventually, they may become maintenance or utilities superintendents.

OCCUPATIONAL COMPOSITE
PERCENT OF PEOPLE WITH APTITUDE QUALIFICATIONS
PERCENT
MECHANICAL & CRAFTS
PAGES 5 AND 6 EXPLAIN THIS TABLE
FIND YOUR ASVAB YOUTH POPULATION PERCENTILE SCORE FROM YOUR ASVAB RESULTS SHEET AND READ UP FOR PERCENTAGE

Sample Page from the *Military Career Guide*

Handout II

Explanation of ASVAB Results

A. *Academic Scores* estimate your potential for further formal education and predict performance in general areas requiring verbal and mathematical skills.

B. *Occupational Scores* estimate your potential for successful performance in four general career areas.

C. The numbers that tell how you did in each area are in the column marked "Percentile Scores."

D. These same numbers are plotted in the graph labeled "Grade/Sex Percentile Scores." The percentile scores in this graph tell how you rank in each area in comparison with students of your own grade and sex.

If your percentile in an area is 60, you scored as well as or better than 60 out of 100 students who took the ASVAB. If you scored in the 30th percentile, this means about 70% of the group did better than you in the area.

E. This is a pictorial representation of your scores on the ASVAB-14.

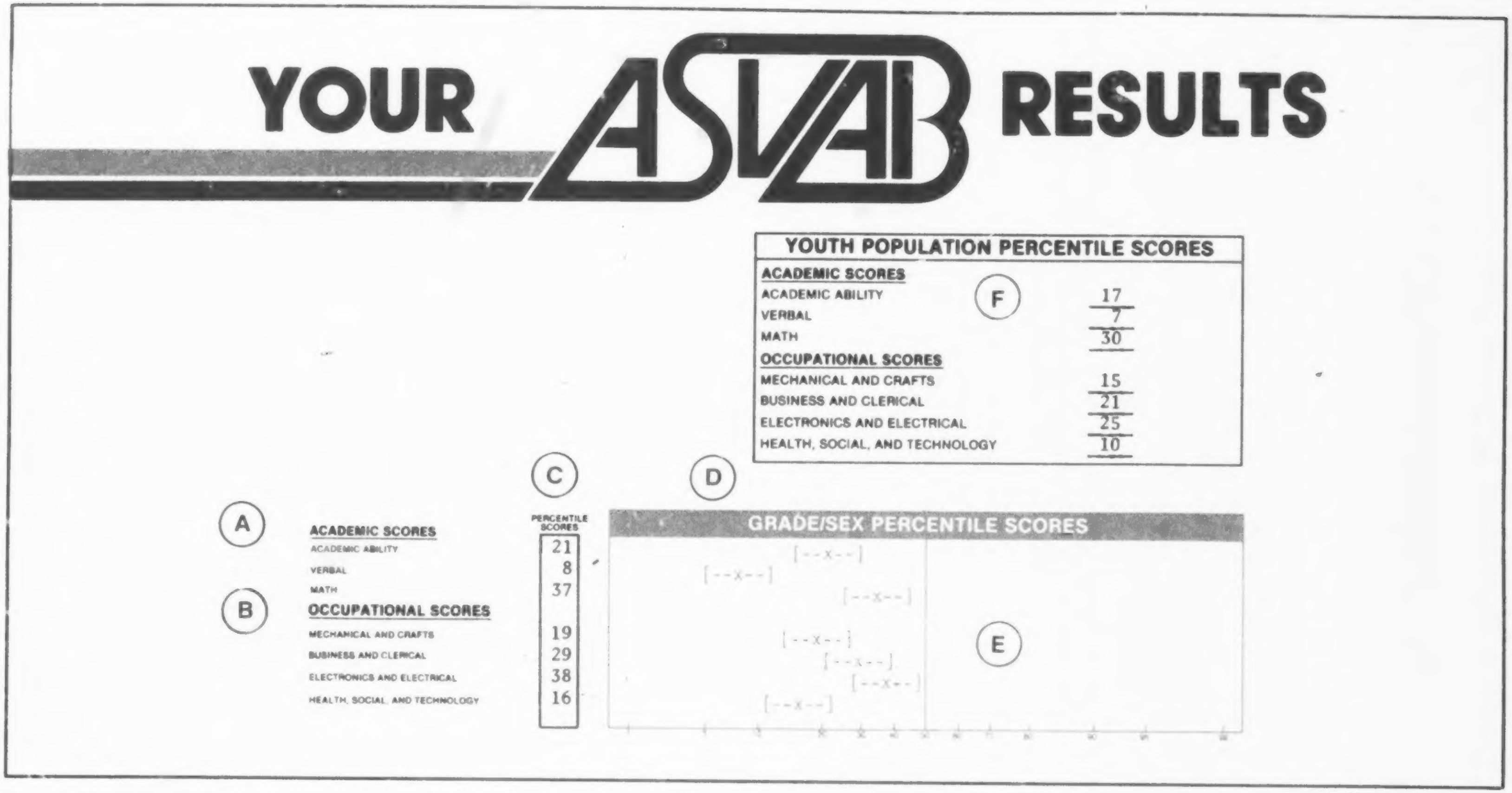
No test scores are perfectly accurate. You should not place too much importance on small differences between the percentiles in various areas. The bands show the more important differences.

The actual percentile scores earned are marked by an X on the graph. The dashes form bands that indicate the line along which the "true scores" probably lie.

Look at the bands for any two areas to see if their ends overlap. If they do not, then the differences are important. For example, *Math* is higher than *Verbal*. The bands for *Mechanical & Crafts* and *Business & Clerical* overlap; and therefore, a real difference may not exist.

F. The other column of scores, titled "Youth Population Percentile Scores," tells how you did on each composite in comparison to a nationally representative sample of young women and men, ages 18 through 23. These scores enable you to estimate your chance of qualifying for at least one military specialty within 134 enlisted occupations in the *Military Career Guide: Employment and Training Opportunities in the Military*. If you want to explore training and career options in the military, you should ask a counselor or the person working in the career center for further help.

A counselor also can tell you how your scores compared to students of the opposite sex and to all students in your grade. Depending on what occupations you are interested in exploring, these other scores may provide you with additional useful information.



YOUR ASVAB RESULTS

YOUTH POPULATION PERCENTILE SCORES	
ACADEMIC SCORES	
ACADEMIC ABILITY	17
VERBAL	7
MATH	30
OCCUPATIONAL SCORES	
MECHANICAL AND CRAFTS	15
BUSINESS AND CLERICAL	21
ELECTRONICS AND ELECTRICAL	25
HEALTH, SOCIAL, AND TECHNOLOGY	10

	PERCENTILE SCORES
ACADEMIC SCORES	
ACADEMIC ABILITY	21
VERBAL	8
MATH	37
OCCUPATIONAL SCORES	
MECHANICAL AND CRAFTS	19
BUSINESS AND CLERICAL	29
ELECTRONICS AND ELECTRICAL	38
HEALTH, SOCIAL, AND TECHNOLOGY	16

GRADE/SEX PERCENTILE SCORES

Sample Student Results

Handout III

ASVAB Scores

The scores a student receives on the ASVAB are combinations of results on two or more parts of the ASVAB. This handout explains what each score measures and illustrates the types of items that contribute to each score.

ACADEMIC ABILITY

***Academic Ability* is a general indicator of verbal and mathematical abilities.**

ACADEMIC ABILITY = [WORD KNOWLEDGE + PARAGRAPH COMPREHENSION]* + ARITHEMETIC REASONING

1. The accountant **discovered** an error.
   - 1-A found
   - 1-B entered
   - 1-C searched
   - 1-D enlarged

2. **Inform** most nearly means
   - 2-A ask
   - 2-B turn
   - 2-C tell
   - 2-D ignore.

5. A person buys a sandwich for 50¢, soda for 25¢, and pie for 40¢. What is the total cost?
   - 5-A $1.00
   - 5-B $1.05
   - 5-C $1.15
   - 5-D $1.25

6. How many 36-passenger busses will it take to carry 144 people?
   - 6-A 3
   - 6-B 4
   - 6-C 5
   - 6-D 6

3. In certain areas water is so scarce that every attempt is made to conserve it. For instance, on one oasis in the Sahara Desert the amount of water necessary for each date palm tree has been carefully determined.

   How much water is each tree given?
   - 3-A no water at all
   - 3-B water on alternate days
   - 3-C exactly the amount required
   - 3-D water only if it is healthy

4. From a building designer's standpoint, three things that make a home livable are the client, the building site, and the amount of money the client has to spend.

   According to the passage, to make a home livable
   - 4-A it can be built on any piece of land.
   - 4-B the design must fit the designer's income.
   - 4-C the design must fit the owner's income and site.
   - 4-D the prospective piece of land makes little difference.

*Scores of subtests in brackets are combined and weighted as one unit.

Key to the Sample
Test Items

1 - A
2 - C
3 - C
4 - C
5 - C
6 - B

VERBAL

***Verbal* measures performance on questions requiring vocabulary, reading skills, and knowledge of high school science.**

VERBAL = WORD KNOWLEDGE + PARAGRAPH COMPREHENSION + GENERAL SCIENCE

1. The wind is **variable** today.

   1-A mild
   1-B steady
   1-C shifting
   1-D chilling

2. **Cease** most nearly means

   2-A stop.
   2-B start.
   2-C change.
   2-D continue.

3. Twenty-five percent of all household burglaries can be attributed to unlocked windows or doors. Crime is the result of opportunity plus desire. To prevent crime, it is each individual's responsibility to

   3-A provide the desire.
   3-B provide the opportunity.
   3-C prevent the desire.
   3-D prevent the opportunity.

4. From a building designer's standpoint, three things that make a home livable are the client, the building site, and the amount of money the client has to spend.

   According to the passage, to make a home livable

   4-A it can be built on any piece of land.
   4-B the design must fit the designer's income.
   4-C the design must fit the owner's income and site.
   4-D the prospective piece of land makes little difference.

5. An eclipse of the sun throws the shadow of the

   5-A moon on the sun.
   5-B moon on the earth.
   5-C earth on the sun.
   5-D earth on the moon.

6. Substances which hasten chemical reaction time without themselves undergoing change are called

   6-A buffers.
   6-B colloids.
   6-C reducers.
   6-D catalysts.

Key to the Sample
Test Items

1 - C
2 - A
3 - D
4 - C
5 - B
6 - D

MATH

Math measures ability to use mathematical principles and arithmetic skills to solve problems.

MATH = ARITHMETIC REASONING + MATHEMATICS KNOWLEDGE

1. It costs $0.50 per square yard to waterproof canvas. What will it cost to waterproof a canvas truck cover that is 15' x 24'?

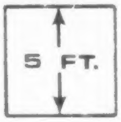
   1-A $ 6.67
   1-B $ 18.00
   1-C $ 20.00
   1-D $180.00

2. A pole 24 feet high has a shadow 8 feet long. A nearby pole is 72 feet high. How long is its shadow?

   2-A 16 feet
   2-B 24 feet
   2-C 32 feet
   2-D 56 feet

3. If $x + 6 = 7$, then x is equal to

   3-A 0
   3-B 1
   3-C -1
   3-D 7/6



4. What is the area of this square?

   4-A 1 square foot
   4-B 5 square feet
   4-C 10 square feet
   4-D 25 square feet

Key to the Sample
Test Items

1 - C
2 - B
3 - B
4 - D

MECHANICAL & CRAFTS

***Mechanical & Crafts* measures arithmetic skills; understanding of mechanical principles; information concerning automobiles, shop terminology, and practices; and electricity and electronics. This score is an estimate of potential for successful performance in the mechanical and crafts career area.**

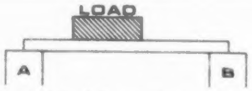
MECHANICAL & CRAFTS = ARITHMETIC REASONING + MECHANICAL COMPREHENSION + AUTO & SHOP INFORMATION + ELECTRONICS INFORMATION

1. How many 36-passenger busses will it take to carry 144 people?

1-A 3
1-B 4
1-C 5
1-D 6

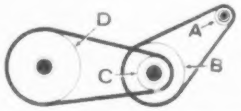
2. It costs $0.50 per square yard to waterproof canvas. What will it cost to waterproof a canvas truck cover that is 15' x 24'?

2-A $ 6.67
2-B $ 18.00
2-C $ 20.00
2-D $180.00



3. Which post holds up the greater part of the load?

3-A post A
3-B post B
3-C both equal
3-D not clear



4. In this arrangement of pulleys, which pulley turns fastest?

4-A A
4-B B
4-C C
4-D D

5. A car uses too much oil when which parts are worn?

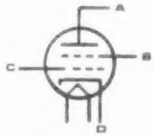
5-A pistons
5-B piston rings
5-C main bearings
5-D connecting rods

6. The saw shown above is used mainly to cut

6-A plywood.
6-B odd-shaped holes in wood.
6-C along the grain of the wood.
6-D across the grain of the wood.

7. Which of the following has the least resistance?

7-A wood
7-B iron
7-C rubber
7-D silver



8. In the vacuum tube schematic illustration, the cathode is element

8-A A
8-B B
8-C C
8-D D

Key to the Sample Test Items

1 - B
2 - C
3 - A
4 - A

5 - B
6 - B
7 - D
8 - D

BUSINESS & CLERICAL

***Business & Clerical* measures vocabulary, reading, coding, and mathematical skills. This score is an estimate of potential for successful performance in the business and clerical career area.**

BUSINESS & CLERICAL = [WORD KNOWLEDGE + PARAGRAPH COMPREHENSION]* + CODING SPEED + MATHEMATICS KNOWLEDGE

1. The wind is **variable** today.

   1-A mild
   1-B steady
   1-C shifting
   1-D chilling

2. **Impair** most nearly means

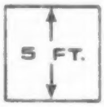
   2-A direct
   2-B weaken
   2-C improve.
   2-D stimulate.

12. If $x + 6 = 7$, then x is equal to

   12-A 0
   12-B 1
   12-C -1
   12-D 7/6

13. What is the area of this square?

   13-A 1 square foot
   13-B 5 square feet
   13-C 10 square feet
   13-D 25 square feet



3. Twenty-five percent of all household burglaries can be attributed to unlocked windows or doors. Crime is the result of opportunity plus desire. To prevent crime, it is each individual's responsibility to

   3-A provide the desire.
   3-B provide the opportunity.
   3-C prevent the desire.
   3-D prevent the opportunity.

4. In certain areas water is so scarce that every attempt is made to conserve it. For instance, on one oasis in the Sahara Desert the amount of water necessary for each date palm tree has been carefully determined.

   How much water is each tree given?

   4-A no water at all
   4-B water on alternate days
   4-C exactly the amount required
   4-D water only if it is healthy

KEY

bargain 8385	house 2859	owner 6227
chin 8930	knife 7150	point 4703
game 6456	music 1117	sofa 9645
	sunshine 7489	

QUESTIONS	ANSWERS A	B	C	D	E
5. game	6456	7150	8385	8930	9645
6. knife	1117	6456	7150	7489	8385
7. bargain	2859	6227	7489	8385	9645
8. chin	2859	4703	8385	8930	9645
9. house	1117	2859	6227	7150	7489
10. sofa	7150	7489	8385	8930	9645
11. owner	4703	6227	6456	7150	8930

Key to the Sample Test Items

1 - C
2 - B
3 - D
4 - C
5 - A
6 - C
7 - D
8 - D
9 - B
10 - E
11 - B
12 - B
13 - D

*Scores of subtests in brackets are combined and weighted as one unit

ELECTRONICS & ELECTRICAL

Electronics & Electrical **measures ability to solve problems requiring knowledge of mathematics, electricity and electronics, and science. This score is an estimate of potential for successful performance in the electronics and electrical career area.**

ELECTRONICS & ELECTRICAL = ARITHMETIC REASONING + MATHEMATICS KNOWLEDGE + ELECTRONICS INFORMATION + GENERAL SCIENCE

1. A person buys a sandwich for 50¢, soda for 25¢, and pie for 40¢. What is the total cost?

   1-A $1.00
   1-B $1.05
   1-C $1.15
   1-D $1.25

2. How many 36-passenger busses will it take to carry 144 people?

   2-A 3
   2-B 4
   2-C 5
   2-D 6

3. If 50% of X = 66, then X =

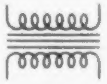
   3-A 33
   3-B 66
   3-C 99
   3-D 132

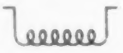
4. If you multiply x + 3 by 2x + 5, how many x's will there be in the product?

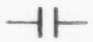
   4-A 3
   4-B 6
   4-C 9
   4-D 11

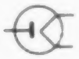
5. The safest way to run an extension cord to a lamp is

   5-A under a rug.
   5-B under a sofa.
   5-C behind a sofa.
   5-D along a baseboard.

A


B


C


D


6. Which of the above is the symbol for a transformer?

   6-A A
   6-B B
   6-C C
   6-D D

7. The chief nutrient in lean meat is

   7-A fat.
   7-B starch.
   7-C protein.
   7-D carbohydrates.

Key to the Sample
Test Items

1 - C
2 - B
3 - D
4 - D
5 - D
6 - A
7 - C

HEALTH, SOCIAL, & TECHNOLOGY

Health, Social, & Technology **measures the ability to answer questions requiring vocabulary, reading, arithmetic reasoning, and mechanical reasoning skills. This score is an estimate of potential for successful performance in the health, social, and technology career area. This career area includes occupations such as air traffic controller, medical technician, and police officer.**

HEALTH, SOCIAL, & TECHNOLOGY = [WORD KNOWLEDGE + PARAGRAPH COMPREHENSION]* + ARITHMETIC REASONING + MECHANICAL COMPREHENSION

1. **Small** most nearly means

   1-A cheap.
   1-B round.
   1-C sturdy.
   1-D little

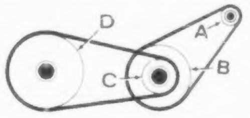
2. The accountant **discovered** an error.

   2-A found
   2-B entered
   2-C searched
   2-D enlarged

3. From a building designer's standpoint, three things that make a home livable are the client, the building site, and the amount of money the client has to spend.

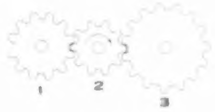
   According to the passage, to make a home livable

   3-A it can be built on any piece of land.
   3-B the design must fit the designer's income.
   3-C the design must fit the owner's income and site.
   3-D the prospective piece of land makes little difference.



4. In this arrangement of pulleys, which pulley turns fastest?

   4-A A
   4-B B
   4-C C
   4-D D



5. Which of the other gears is moving in the same direction as gear 2?

   5-A gear 1
   5-B gear 3
   5-C both of the other gears
   5-D neither of the other gears

6. How many 36-passenger busses will it take to carry 144 people?

   6-A 3
   6-B 4
   6-C 5
   6-D 6

7. It costs $0.50 per square yard to waterproof canvas. What will it cost to waterproof a canvas truck cover that is 15' x 24'?

   7-A $ 6.67
   7-B $ 18.00
   7-C $ 20.00
   7-D $180.00

Key to the Sample Test Items

1 - D
2 - A
3 - C
4 - A
5 - D
6 - B
7 - C

*Scores of subtests in brackets are combined and weighted as one unit.

Handout IV

The Military Recruiter

ASVAB

WHAT DO MILITARY RECRUITERS DO?

Recruiters work for a particular branch of the military services: the Army, Navy, Air Force, Marine Corps, or Coast Guard. It is the job of recruiters to identify and screen individuals for their service. In addition, recruiters advise people who are thinking about joining the military.

WHAT CAN MILITARY RECRUITERS DO FOR ME?

Recruiters can provide up-to-date information on life in their branch of the military services. Recruiters *can* answer questions about

- whether or not your ASVAB scores meet the mental ability qualification for their branch;
- the training programs for which you might qualify;
- job-related requirements (such as special security clearances), training provided, benefits, and opportunities for promotion;
- lifestyles;
- educational opportunities; and
- enlistment options.

Recruiters *cannot*

- guarantee that you will get into a particular training program. A military counselor at the local Military Entrance Processing Station (MEPS) can do that, provided you meet all qualifications and that training is available.
- determine whether life in the military services is for you. You are in the best position to do that. Your school counselor and your family probably can help you as you sort through information and make decisions.

WHAT SHOULD I DO IF I WANT TO TALK TO A MILITARY RECRUITER?

- Call a recruiter and make an appointment.
- You might want to ask your school counselor to arrange for you to meet with a recruiter at school.
- Before your appointment, review the "Questions for the Future" handout. Check those questions that you want to ask. You also might want to write some questions of your own.

WHAT SHOULD I DO IF I AM NOT SATISFIED WITH A RECRUITER?

- You can go to another recruiter from the same branch of the service or from another military service.

WHAT IF I DECIDE THAT I AM NOT INTERESTED IN JOINING ANY OF THE MILITARY SERVICES?

- You can tell the recruiter that you are not interested in joining at this time.
- Keep your options open. You may change your plans in the future.

Handout V

Know Yourself

ASVAB

You need to know a lot about yourself before you can decide what type of career may be best for you. It is important that you consider many types of information. Your ASVAB results tell you about some of your aptitudes. Interests, achievement scores, grades in subject areas, values, and your personal motivation also are important.

IDENTIFY YOUR INTERESTS

1. Have you taken an interest inventory? ____________________

   If yes, what did you learn?

   What occupations/areas were suggested?

   If no, ask your counselor how you might take one.

2. What occupations do you think would be interesting for you?

IDENTIFY YOUR ACHIEVEMENTS

3. For the last 2-3 years, list the subjects in which you got the best grades:

4. List the subjects you like best:

5. What are the subjects that you like best and in which you also receive the best grades?

6. In which subjects haven't you done so well?

7. What things are you good at that you do outside of school (for example, repair a car, sing in a choral group, sew, play soccer)?

8. Have you taken achievement tests? If yes, in what areas were your highest scores?

What were your lowest scores?

If no, ask your counselor if an achievement test might help you to understand your academic strengths and weaknesses more completely.

9. What was your highest *Academic Score* on the ASVAB?

10. What were your two highest *Occupational Scores* on the ASVAB?

11. Do your ASVAB results tell you something about yourself? If so, what?

12. How do your ASVAB results fit in with the other things that you know about yourself?

LOOK INTO THE FUTURE

13. What would you like to be doing in 5 years?

14. What would you like to be doing in 10 years?

THINK ABOUT YOUR INTERESTS, ABILITIES, AND GOALS AND HOW THEY ALL RELATE TO YOUR CAREER CHOICES

15. With your counselor's help, make a list of careers that would be appropriate for you to explore.

16. What other information do you need to consider before you decide on a career?

Handout VI

Questions for the Future

One of the most important decisions you may make is deciding what you will do after you graduate from high school. You may have several options. You may decide to attend a postsecondary school, work at a temporary or permanent job, join the military, or go to school part-time while you work in the private, public, or military sector. Interviewing, or meeting formally, with a representative from these sectors is a good way to obtain information about these options.

This handout is designed to help you prepare for interviews and obtain information from interviews that will assist you in deciding among different options. Section A will help in preparing for an interview. Section B is a list of sample questions to ask representatives of postsecondary schools or training institutions that you may wish to attend. Section C is a list of sample questions for representatives of prospective employers.

If you are considering entering the military services, questions from both Sections B and C may be useful because a decision to join the military involves both training and occupational opportunities. Training and occupational opportunities differ in each service. You may wish, therefore, to address your questions to representatives of different branches of the military services.

A. PREPARING FOR THE INTERVIEW

1. Plan in advance

- Read the sample questions on this handout.
- Write down any additional questions you may have.
- Share your questions with your family, friends, teachers, and others whose input you value for ideas about additional information you may want to collect.
- Decide exactly what you want to know and which questions you will ask to obtain this information.

Unless you review your questions and decide which questions to ask before your interview, you may not obtain information of importance to you during the interview.

2. Be realistic

The person you meet with may not be able to answer all your questions. Many questions cannot be answered with certainty, and answers to other questions may depend entirely on your performance in school or at work.

3. Make a good impression

- Be punctual
- Be well groomed
- Be courteous

B. SAMPLE QUESTIONS FOR REPRESENTATIVES OF POSTSECONDARY SCHOOLS AND TRAINING INSTITUTIONS

1. Will I be able to enter the educational or training program of my choice?

2. What will I have to invest in terms of time and money to complete this program?

3. What types of jobs have recent graduates obtained?

4. How many job openings are available annually nationwide? How many openings are expected in the next 5 years?

5. Where are most of these jobs located?

6. How many openings are expected in the geographic area where I prefer to work?

7. After I complete this program, what are my chances of finding a job where I can use the skills I have learned?

8. What kind of assistance can I expect from this school in finding a job?

9. How much money can I expect to earn on a job related to this program?

10. Additional questions I want to ask:

C. QUESTIONS FOR REPRESENTATIVES OF EMPLOYERS

1. What jobs are available?

2. What actual job tasks are involved in this occupation?

3. How many openings does this company have in this occupation every year? Are the numbers increasing, decreasing, or remaining constant?

4. Has high technology affected this occupational area? If yes, how? How will technological advances affect this area in the future?

5. If my work is good, what are the prospects for promotions and long-term employment?

6. Will I need more education or special training to progress in this occupational area?

7. Do you provide training that would enable me to advance and obtain a higher level position?

8. What is the starting salary?

9. What types of benefits (health insurance, opportunities for further education, or retirement plans) do you offer?

10. What hours will I be expected to work?

11. Will this job require me to move?

12. What type of supervision can I expect to receive?

13. Additional questions I want to ask:

Handout VII

Linking Your ASVAB Scores to Specific Occupations

The *occupational scores* on the ASVAB relate to general career areas: *Mechanical & Crafts, Business & Clerical, Electronics & Electrical,* and *Health, Social, & Technology.* Within these areas are occupations that require different levels of abilities and training. The diagrams on the following pages give examples of various occupations you might want to investigate, depending on your specific *occupational scores* and your interests. The diagrams are provided to help you to relate your ASVAB results to occupations. There are a variety of civilian and military occupational titles given for each of the four career areas.

One way to begin exploring possible occupations is to find your highest *occupational scores.* Then, look at the diagrams on the following pages and make a list of occupations you wish to explore further. You may wish to increase your knowledge of the requirements, projected job openings, salary, opportunities for advancement, and career paths for each occupation you are considering.

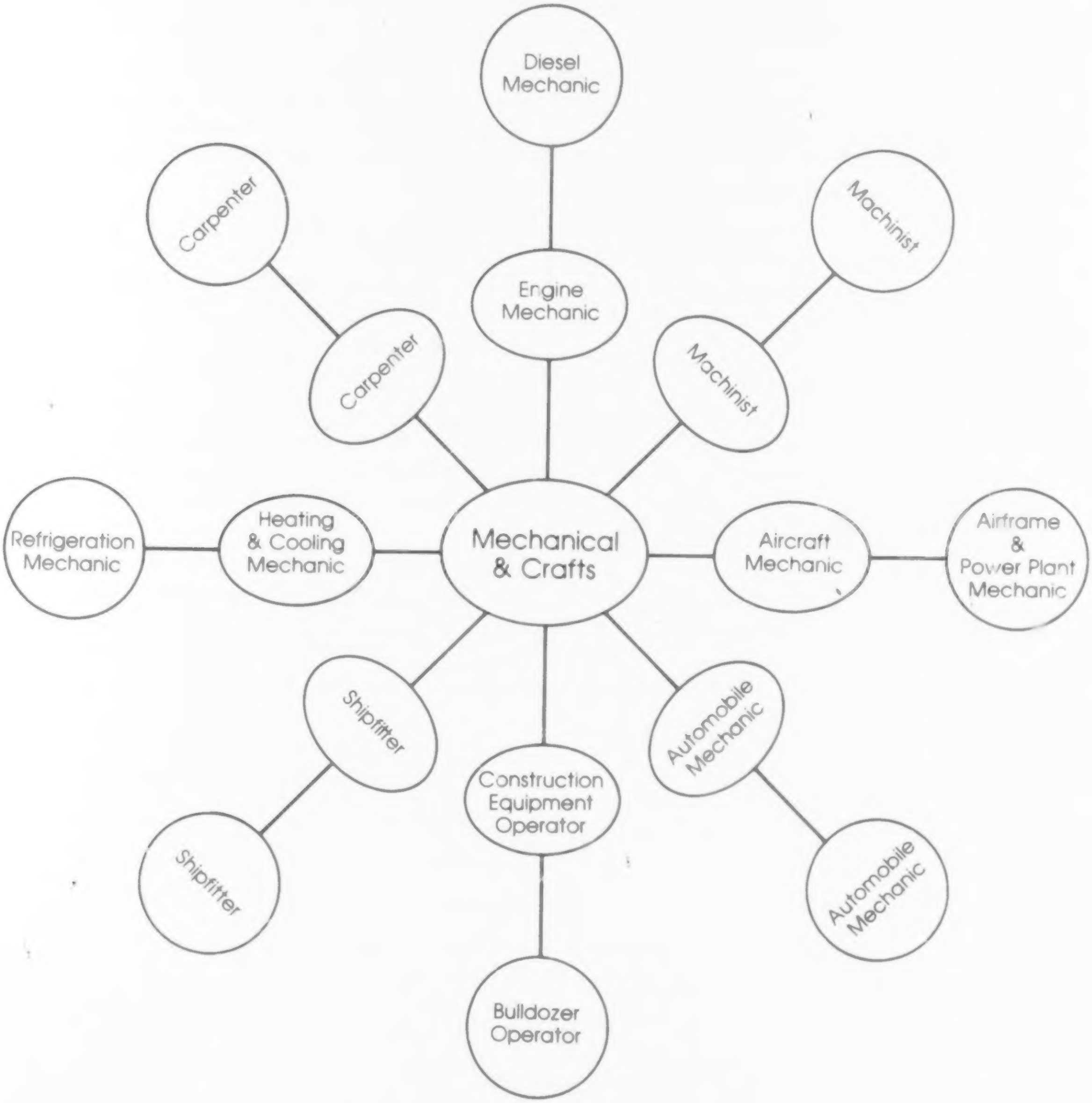
The career center contains a variety of resources for you to use to learn more about the careers you are exploring. For example, the career center has kits, printed materials, films, filmstrips, and cassettes. A career aide/librarian is available to help you find what you need. Public libraries also have resources if our school does not have what you need.

Remember, the occupations identified on the following diagrams are simply given as a starting point. They are designed to provide you with examples of types of occupations that are related to the ASVAB *occupational scores.* There are many other occupations that are not listed. Also, remember that ASVAB scores do not relate to all career areas. ASVAB scores, for example, will not help you learn about your abilities for occupations in music and the performing arts.

Keep an open mind and learn as much as you can about the world of work before making career decisions. In today's world, it is very likely that you will have many jobs during your lifetime. Now is the time to expand your knowledge of the world of work.

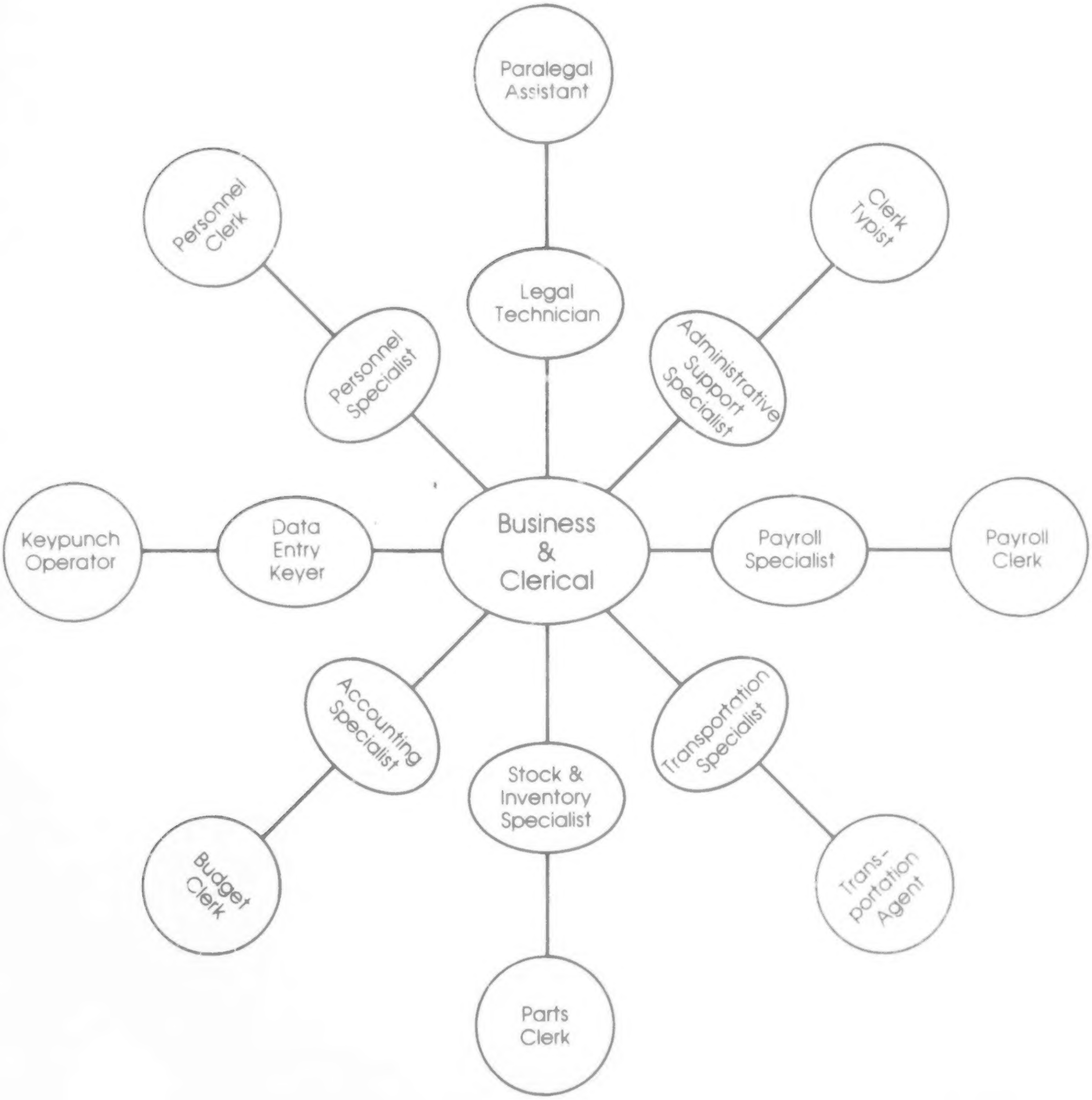
MECHANICAL & CRAFTS

This figure relates occupations to the *Mechanical & Crafts score* on the ASVAB. The inner circle consists of military occupational titles. The outer circle consists of related civilian occupational titles.



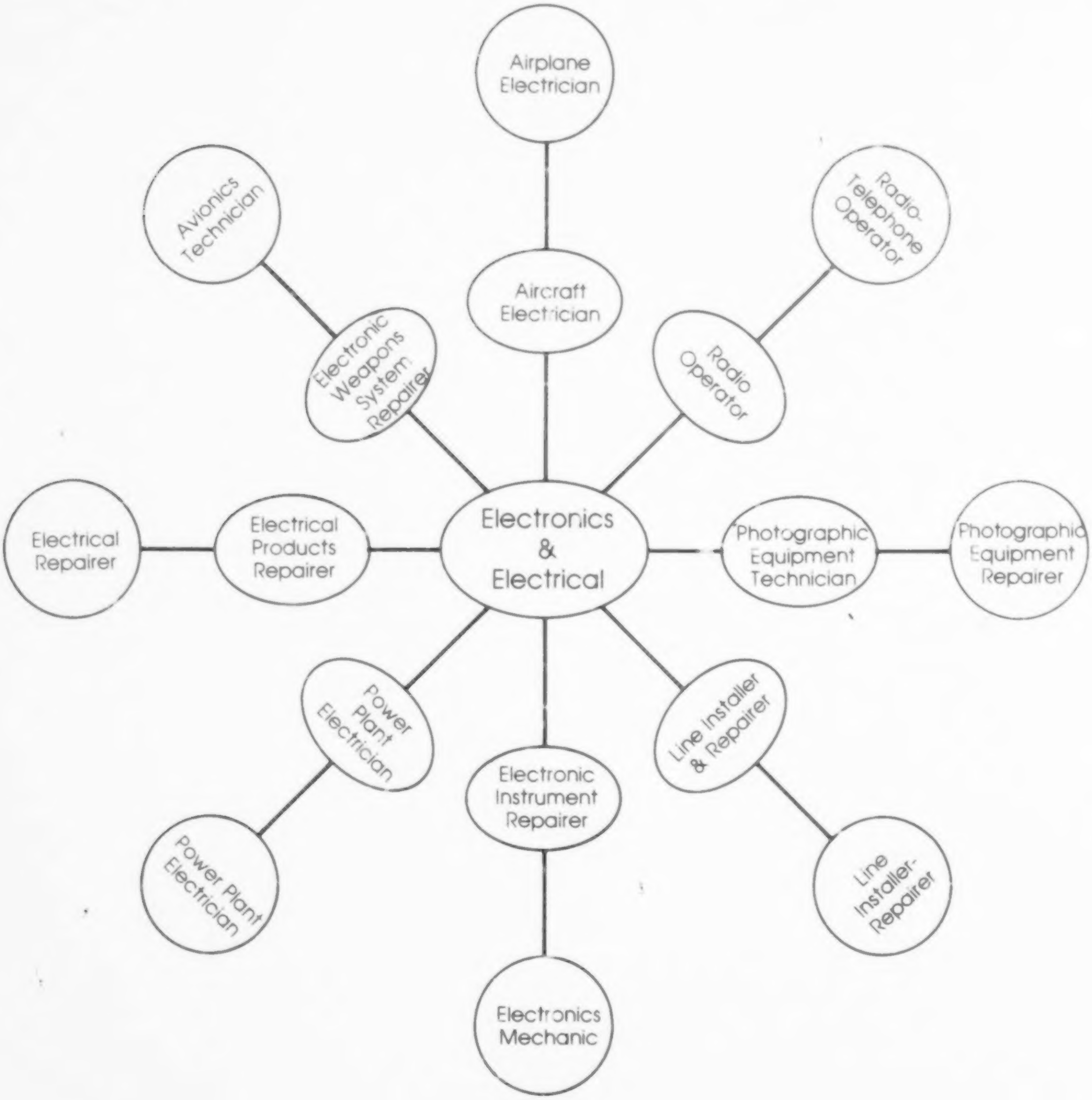
BUSINESS & CLERICAL

This figure relates occupations to the *Business & Clerical score* on the ASVAB. The inner circle consists of military occupational titles. The outer circle consists of related civilian occupational titles.



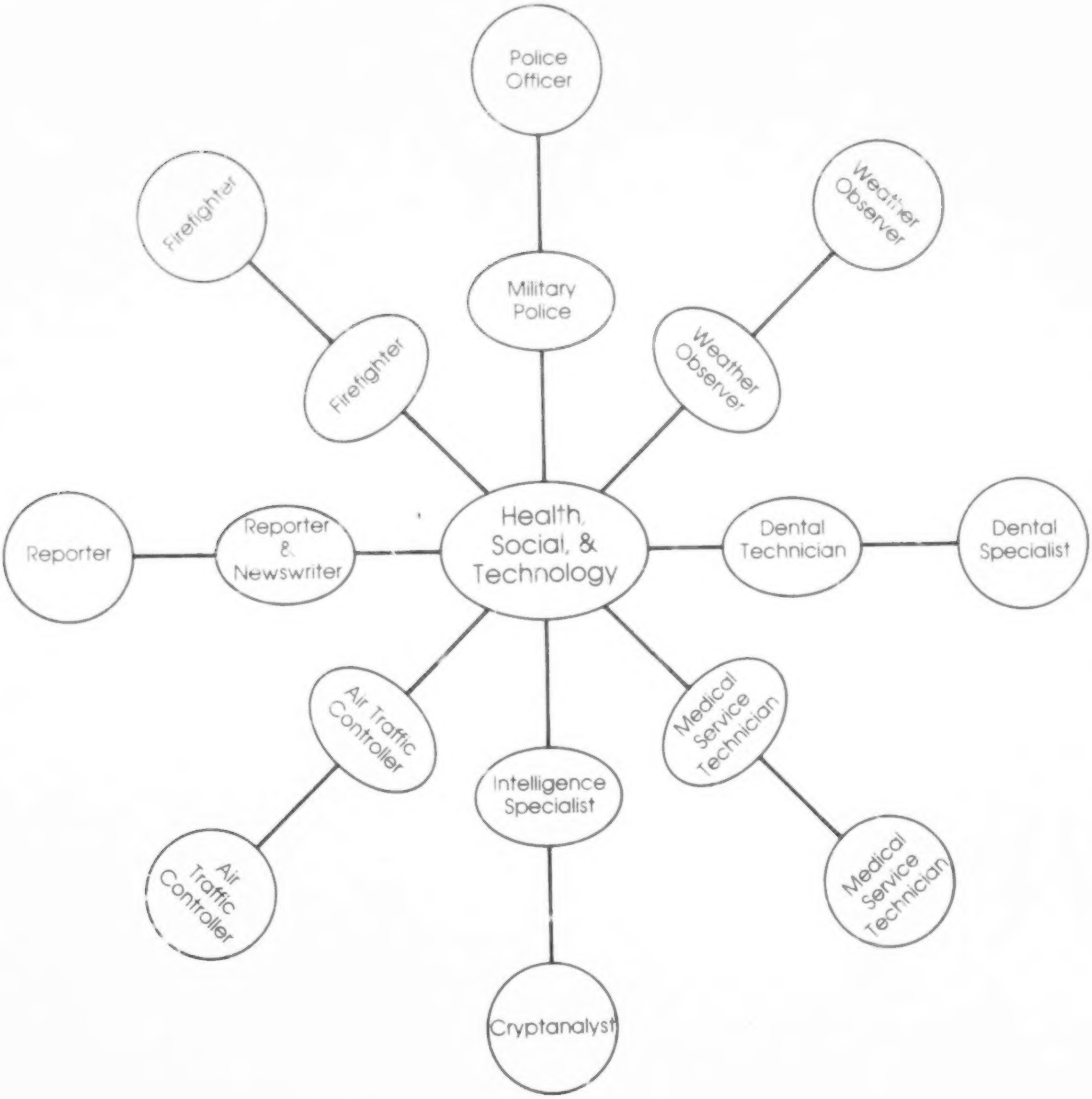
ELECTRONICS & ELECTRICAL

This figure relates occupations to the *Electronics & Electrical score* on the ASVAB. The inner circle consists of military occupational titles. The outer circle consists of related civilian occupational titles.



HEALTH, SOCIAL, & TECHNOLOGY

This figure relates occupations to the *Health, Social, & Technology score* on the ASVAB. The inner circle consists of military occupational titles. The outer circle consists of related civilian occupational titles.



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